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## TABLE OF CONTENTS.

| | | PAGE |
|---|---|---|
| **Editorial:** | | |
| Why Gold Is Exported | | 121 |
| The Latest Success in Rubber | | 142 |
| **Rubber Tires at the New York Cycle Show** | | **123** |
| **The Work of the Brazilian Rubber-Tree Tappers** | *M. F. Sesselberg* | **127** |
| **India-Rubber Miscellany** | | **129** |
| **Brief Abstracts of Recent Rubber Patents** | | **130** |
| **Hard Rubber Casting Patterns** | *John T. Usher* | **131** |
| **The Greatest of All Rubber Factories** | *A. M. Stickney* | **133** |
| **New Goods and Specialties** *(Illustrated)*: | | |
| The Chesterfield Mackintosh | | 135 |
| Rubber Shoes for Dogs | | 135 |
| Zig Zag Stitched Belting | | 135 |
| The Snow Drift Gaiter | | 135 |
| A New Use of Rubber for Carriages | | 135 |
| A New Rubber Heel Lift | | 136 |
| The Simplicity Folding Mud Guard | | 136 |
| Another Pneumatic Shoe Sole | | 136 |
| Pneumatic Saddle Pads | | 136 |
| The Sinew Electric Tape | | 137 |
| Bailey's Rubber Trumpet | | 137 |
| The A. P. Hot Water Bottle | | 137 |
| Imperial Spiral Piston Packing | | 137 |
| A Pneumatic Tired Skate | | 137 |
| Styles and Shapes of Toes | | 138 |
| The Gibbs Cushioned Horse Shoe | | 138 |
| The Arrow Pneumatic Tire | | 138 |
| The Inverness Mackintosh | | 138 |
| Submarine Bathing Cap | | 139 |
| The Comet Lawn Sprinkler | | 139 |
| **Why a Pneumatic Tire is Fast** | *Sterling Elliott* | **141** |
| **India-Rubber Cases in Court** | | **143** |
| **Miscellaneous:** | | |
| New York Commercial Co. in England | | 122 |
| Rubber Industries of Canada | | 126 |
| Rubber Clothing a Hundred Years Ago | | 128 |
| The Pacific Cable and Gutta-Percha | | 132 |
| New Rubber-Goring Mill | | 134 |
| Mr. Banigan's Gift to a University | | 143 |
| Some Fine Ladies' Mackintoshes | | 143 |
| Trading in Rubber Stocks | | 144 |
| Trade Publications | | 144 |
| Obituary | | 144 |
| **Heard and Seen in the Trade** | | **145** |
| **Trade and Personal Notes** | | **146** |
| **India-Rubber Statistics from Various Sources** | | **148** |
| **Review of the India-Rubber Market** | | **149** |

## WHY GOLD IS EXPORTED.

OUR contention in these columns in December last, tha no more gold is being exported by the United States than is owed abroad, finds able confirmation in the current number of *The Forum*, from the pen of Mr. Alfred S. Heidelbach, the head of a great international banking house through which a good share of the gold exports have been made. THE INDIA RUBBER WORLD pointed out that our exports have to pay not only for the goods which we import, but also the charges of foreign ships for freight, the interest due foreign investors, and some other debts. If all these should amount to more than our exports, the difference must be paid in specie, even when, in the ordinary use of the term, the "balance of trade" is in our favor. Mr. Heidelbach undertakes to supply some figures, with the assurance that he has understated rather than overstated the amounts. Here they are:

| | |
|---|---|
| Freights paid to foreign ship-owners | $100,000,000 |
| Spent by Americans in travel | 100,000,000 |
| Dividends and interest on American securities | 75,000,000 |
| Profits of non-resident corporations and individuals doing business here | 75,000,000 |
| Total, annually | $350,000,000 |

Since our exports in no year have ever exceeded by any such amount as $350,000,000 the value of our imports, it becomes evident that the United States has been all the while a debtor nation, and that our people have been mistaken in complacently thinking that so long as the "balance of trade" was on the right side the country was safe. But why didn't the gold always go out at the present rate? This question Mr. Heidelbach answers by pointing out that in the past foreigners have allowed some of their profits or credits in the United States to remain in the country for investment, since most European countries have a surplus of capital. The reason that they are now demanding their money as fast as it becomes due—and demanding it in gold—is that there is distrust of our money abroad, and they are taking no more chances than can be helped. It is a good while since we had enough gold in the treasury to pay for the coffee we drink in a year, and as for the silver coinage—it would be worth only half its face value abroad. What our many kinds of paper money would be worth in case the gold should be exhausted is a colossal conundrum. With half our congressmen trying all the while to bring more "cheap" money into existence, it is small wonder that our creditors seize the gold at every opportunity.

It is not intended here to relieve our lawmakers from the task of finding a remedy for the existing situation, but only to assist, in the modest capacity of a little trade journal, in showing just what the situation is in order that public opinion may the more readily recognize and support the right sort of legislation whenever it shall be proposed at Washington. There is no harm in repeating, by the way, the suggestion made in December, that whenever we shall have ships enough for our own commerce one of the biggest items of our expenditure abroad will be turned into American pockets. It is worth thinking about.

## THE LATEST SUCCESS IN RUBBER.

THE success of the rubber tire for bicycles has not been more marked than that of the rubber vehicle-tire promises to be very soon. Great as has been the advance of the bicycle, it does not yet wholly possess the land, and we need not yet prepare for the disappearance of carriages, wagons, and carts. Not even with the aid of the "trolley" cars is the horse likely to be driven into retirement in our day, and a horse without a set of rubber-tired wheels will soon be as much behind the times as a steel-tired bicycle would be.

It cannot be doubted that rubber tires are demanded by carriage-owners. For fifty years inventors have been toiling to produce something practical in this line, being encouraged thereto by the need for noiseless, yielding, elastic tires. We have all seen how readily the first rubber-tired bicycles were seized by the victims of the old boneshakers; we have the assertion of a large manufacturer of sulkies that after the first heat by Nancy Hanks in front of pneumatic tires the demand for the old style of sulky immediately died; and now the rubber carriage-tires have come forward—as truly in response to a public demand as any article of manufacture in history. It is a truth that the carriage-manufacturers have been forced to investigate them by the pressure from their customers, and inquiries are pouring in upon every rubber factory in the country for pointers on tires.

As is usually the case, the rubber-manufacturers are equal to the occasion. The most casual visitor at the late cycle shows must have seen this. Ever since the success of the bicycle-tires they have been experimenting upon wheels of other kinds, with the result that, one after another, the numerous difficulties in the way have been overcome. Fear of punctures need no longer be a menace to the pleasure of a drive; no longer is one obliged, in order to have pneumatic tires, to buy such small wheels or tires of such diameter as to excite merriment; the cost is not a burden when the benefit to the vehicle is counted. Everything has been worked out by the inventors, and quietly the different manufacturers have been placing their tires on trial all over the country, until there is now hardly an important town where they have not been seen. And now that the experimental stage has been passed, we may look for the work to begin of pushing this new and successful application of rubber upon the market. The pushing, by the way, as has already been intimated, will be mainly in convincing vehicle-owners that what they want has been invented.

What has been written here applies of course to pneumatic tires; solid rubber is better than steel rims, but in a contest with pneumatic tires it would never be heard of. It has, with the support of the ultra-fashionable carriage trade,—which has a little money involved,—delayed somewhat the introduction of the pneumatic tire, but fashion will not long avail against considerations of comfort in what New York looks upon as the "provinces." Besides, doesn't H. R. H., the Prince of Wales, drive in a pneumatic-tired brougham, bought with his own money?

OUR readers cannot fail to be interested in the article printed this month describing the great establishment of the Russian-American Rubber Co., at St. Petersburg. The author, Mr. A. M. Stickney, is the president of the Wellman Sole-Cutting Machine Co., and has inherited an interest in and a familiarity with the rubber industry, his father having been interested in the first rubber factory established in Europe with American capital. Mr. Stickney was educated at the university in Berlin and he has since been an extensive traveler on the Continent, so that our readers will have, in his letters, the benefit of the observations of an American who knows Europe much more thoroughly than the mere tourist.

## NEW YORK COMMERCIAL CO. IN ENGLAND.

AN important new arrangement went into effect on Monday, February 4, with the opening of new houses in London and Liverpool to succeed the agencies of the New York Commercial Co. and George A. Alden & Co., maintained in those cities since December, 1893. The London house will be conducted under the style of Alden, Symington & Co., at No. 141 Fenchurch street, the firm including William Symington, head of the late firm of Wm. Symington & Co. In Liverpool the firm name will be Symington, Bussweiler & Co., and the place of business at No. 8 Canning place.

The effect of this new arrangement will be to give the New York Commercial Co. a position of first importance in the London rubber market, which is the center of the trade in African and East Indian grades, and second only to New York as a market for Pará rubber. A great point gained by means of this new connection is that the company will now be able to receive direct consignments from the African ports, which are rapidly becoming greater factors in the world's rubber supply. The African rubber field is, practically speaking, inexhaustible, while no lack of labor need ever be taken into calculation. In Brazil, on the other hand, while the territory is enormous, the rubber-trees are confined to the water-courses, and the labor supply promises to be constantly limited. What is of more importance is that the increased care, under more intelligent supervision of the gatherers, is leading to the steady improvement of the rubber obtained from Africa. The shipping facilities by which the West African coast—and Singapore as well—is connected with London are under English ownership and control and the banking facilities are located in London, so that it is essential to handling African rubber to the best advantage that there shall be a strongly-established London house. This has now been attained by the New York Commercial Co.

It may be added here that the same company have lately established a branch house at Manáos, which strengthens the position already secured in the Amazon valley through the house of Adelbert H. Alden, at Pará. On February 3 W. W. Watson, who has been employed in the Alden interest for six years past, left New York on the *Lisbonense*, to strengthen the forces of the Manáos house.

—The Toronto Rubber Shoe Manufacturing Co., Limited have been reorganized as the Rubber Shoe Co. of Toronto, the officers of the former concern being in charge of the new, at the same address—No. 76 Bay street. The company embraces J. H. Taylor, W. C. Harvey, and C. C. Van Norman, the last two of whom compose the firm of Harvey and Van Norman prominently engaged in the manufacture of boots and shoes.

# RUBBER TIRES AT THE NEW YORK CYCLE SHOW.

AFTER the two great cycle shows of last month figures are not needed to prove that the new industry which they represented has reached enormous proportions in the United States. It is worth mentioning, however, that the first annual meeting of the National Board of Trade of Cycle Manufacturers, held in New York in connection with the Madison Square show, represented $90,000,000 of invested capital, whereas the census of 1890 reported only $93,000,000 of capital employed in the carriage manufacturing industry. A point to be considered here is that the one interest has been developing for a century, while the other is barely ten years old. The center of interest to the rubber trade in all this is that the greatest development of bicycling has been due to the pneumatic tire, which has been conspicuous in the trade for only four seasons. But the end is not yet. This is such a vast country that the 500,000 bicycles which it is proposed to build this year will not over-stock the market, and a steady increase in the business is expected for years to come, all the while affording an opportunity for new triumphs for the rubber-man. Of course every tire exhibited at Madison Square was "the best yet made," but nobody claims that the perfect tire has been invented, and nobody expects the perfect tire to be made without India-rubber. Hence the incentive to continued activity in this field of invention. Meanwhile there is a growing demand for rubber tires for other than bicycle wheels, and a lot of people are trying to fill this demand satisfactorily. All in all, India-rubber is coming to be nowhere else so much *en evidence* as on wheels, and nothing else has ever done so much to familiarize the public with the properties of India-rubber as the wheel tire has done.

It is unnecessary to treat of the two cycle shows in detail, the same exhibitors for the most part having been interested at both Chicago and New York, and this article will be devoted principally to a mention of the tire manufacturers who occupied spaces at the latter show, in the order in which they were named in the official list. The two shows are not to be regarded as having been antagonistic; on the contrary, it is proposed that hereafter they shall be given under one management, during the same month, in order that like advantages may be enjoyed by the trade in both the east and the west. The latter section is becoming an important seat of the manufacture of bicycles, it being estimated that nearly half of the output of 1895 will be produced west of Pennsylvania. As to the value of these exhibitions, while there is a division of sentiment, the majority believe that their good influence in educating the public in bicycling more than offsets the cost, even if no direct sales should be made in the exhibition halls.

While several new tires have been shown this year, and minor new features in several older ones, and while more inventors and manufacturers have entered the field, there has been no radical departure from the lines exhibited last year, which indicates that the pioneer inventors did their work well. There are now so many good tires in the market that many of the bicycle-manufacturers express no preferences in making up their catalogues, but list two or more different tires, giving the buyer his option. Some of the bicycle catalogues make no mention of any particular tire, leaving the widest choice to their customers. But since the prices of bicycles have been crawling downward so fast, making close figuring necessary, some manufacturers are adopting the right method of listing different grades of tires at different prices, so that the matter of the total cost will be decided by the man who is to pay the bills. There is a growing tendency among bicycle-manufacturers to make the rubber parts also, but this is never likely to be carried so far as to crowd the rubber-men out of this line of work. One more general observation is that the metal wheel-rim is now well-nigh a thing of the past, making it necessary that all tires should be adapted to use on wooden rims.

The first tire-manufacturer on the list was the North American Rubber Co.,—Mr. L. B. Elberson's reorganized company at Setauket, L. I.,—who showed the "North American," a new tire in hose-pipe and inner-tube (laced) forms. It is hand-made, on a pulley, with cemented valve-stem.

The American Dunlop Tire Co. (New York) exhibited the method of construction of their detachable tire, distributing specimens of the Sea Island cotton fiber used, and of the fabric made from it. The rubber tread is made in one endless molded piece, vulcanized, and cemented to the fabric, which does not come into contact with the vulcanizer. The idea is to protect the fabric from damage by the action of chemicals and heat. These parts are made by the Mechanical Fabric Co. (Providence, R. I.) and put together by hand at the Dunlop factory in New York. The tires are also made under license by the Hartford Rubber Works Co. for purchasers of Columbia and Hartford bicycles who prefer detachable tires to single-tubes, and for the agency trade. Dunlop tires weigh from 2 to 4 pounds and retail for $15 a pair.

The L. C. Smith Tire Co. (Syracuse, N. Y.) exhibited the new L. C. Smith detachable tire, which, they announce, will be manufactured soon in works of their own.

The Newton Rubber Works (Newton Upper Falls, Mass.) showed the Newton Detachable P. K. (the initials standing for the inventor's name), which is a new mechanically-fastened tire; the Newton No. 2 and Straus Elastic, both made in inner-tube and in laced double tube form; and the Slick, a laced double-tube tire, lately brought out for the lower-priced demand.

The Cleveland Rubber Works of the Mechanical Rubber Co., in addition to their Loop double-tube cemented tire, which has been on the market for two seasons, showed the new Happy Combination mechanically-fastened tire, both being inventions of J. F. Ives. These are made in all the

sizes demanded by the trade, the standard measures being listed at $12 for the first and $15 (including rims) for the latter. The firm showed also specimens of tires made for many other concerns in the trade, including the Gormully & Jeffery, American Dunlop, and L. C. Smith companies, and also the new Webb tire offered by Parkhurst & Wilkinson; the I. C. (Ives-Clarke) valve, pedal rubbers in great variety, and a new composition handle-grip, which is their novelty.

The New York Belting and Packing Co., Limited, offered as their latest product the League inner-tube cemented tire, vulcanized under a new process warranted to prevent injury to the fabric by stretching, straining, or weakening in manufacture. Extreme lightness, combined with strength and durability, are claimed for it. The League will be the standard tire of E. C. Stearns & Co. (Syracuse, N. Y.), and it appeared on many wheels of different makes in the Madison Square show. The prices are $10, $10.50, and $11. The Whippet tire was shown with some new features, besides which there was a new tire-valve (the Schrader), pedal rubbers, inner tubes packed separately in boxes, and a repair-outfit called "Stick and Stay sundries."

The Eastern Rubber Manufacturing Co., (Trenton, N. J.) had one of the largest tire exhibits in the building. They showed the Rex and the Climax, both double-tube laced tires of the cemented variety; the Arrow, a new detachable tire, suited to almost any rim; and a cheaper tire, branded Comet. Many of the tires in this exhibit were mounted on wheels, the better to show their appearance when in use.

Morgan & Wright (Chicago) manufacture tires in some twenty different styles and weights, intended to meet every demand in the trade. Their novelty this year is the M. & W. Special, embodying a new feature of which E. W. Young is the inventor, designed to facilitate the repairing of single-tube tires. It is an endless band of very thin rubber, inside the tube, slightly less in width than the diameter of the tube when inflated. This is, in effect, a rubber patch in readiness for use whenever and wherever a puncture may occur, and its application is by means of a special injecting needle by which cement is conveyed to the right place and the inner band, with the help of a little pressure, is firmly cemented over the puncture. The standard road tire of this firm is listed at $12. The exhibit included a pair of tires said to have been ridden 23,000 miles, on wheels which had a record of 18,000 miles.

The section occupied by the Columbia Rubber Works Co. (New York), selling agents for the B. F. Goodrich Co., proprietors of the Akron Rubber Works, would alone have made an extensive tire show. They exhibited the Palmer cemented tire, somewhat reduced in size for 1895, with improved valve connection. The price is $15. The Akron tires—A and B—have an endless inner tube substituted this year for the closed-end tube. They are listed at $13 and $11. The Perkins detachable tire, offered for the third season, is the same as the Liberty tire, manufactured by the same firm for the Liberty Cycle Co., having been invented by Robert Perkins, of the latter company. The price, with wood rims, is $15. The Akron company manufacture also the Yost detachable tire, used on Falcon bicycles; the Simplicity 47 tires (in grey rubber); the Frazier sulky-tires; the G. & J. tires, and many other tires on special orders. Among the novelties in tire construction from the Akron works were the Palmer 4-inch tires on the Motor cycle, operated by hot-air engines, exhibited by the Hitchcock Manufacturing Co. (Cortland, N. Y.)

The Hartford Rubber Works Co.'s new tire catalogue is one of the most attractive contributions to the trade literature of the season, and their exhibit was fully in keeping with their catalogue. Their factory, though devoted mainly to the production of tires, is one of the largest rubber-factories in the country. In addition to making the single-tube tires used on the six models of Columbia bicycles and the four models of Hartfords sold by the Pope Manufacturing Co., the company do a large business in supplying tires to the trade, cataloguing them as Hartford roadster, semi-roadster, and racer, each at $12 for $28'' \times 1\frac{1}{2}''$; No. 77 roadster and semi-roadster, each at $9.25 for the same size; and Wizard roadster and semi-roadster, at $9.25. They also manufacture under license the Dunlop and G. & J. tires, selling them to the agency trade at regular prices. The tire-repair outfit of the Hartford company is an important feature in their trade.

The New York Tire Co., who entered the trade only last year, showed almost as wide a range of tires as any other firm. The feature of their tires is the fabric, for which is claimed a secret new process, not covered by patents, by means of which superior strength and minimum weight are secured. The cover is "solutioned" to the fabric.

The Indiana Bicycle Co. (Indianapolis), manufacturers of the Waverley wheels, are now to be enrolled among the tire-manufacturers, having severed their relation to the Indianapolis Rubber Co. They have added to an otherwise complete bicycle-factory a rubber department, and will manufacture under a royalty the G. & J. detachable clincher tire, with the addition of features covered by their own patents, the result being termed the Waverley Clincher tire.

The Boston Woven Hose and Rubber Co. showed their new Vici mechanically-attached tire; the Neverslip, a cemented hand made tire of the same weight and styles; the Evertite, similar to the last, but without the corrugated surface; the regulation hosepipe, the "constrictive" hosepipe, and racing tires. They have made contracts for supplying the Vici tires to some very important bicycle concerns. The list price is $15. The same company manufacture for O. J. Faxon & Co. (Boston) the Puritan tires, in single-tube and double-tube forms, expressly for the Puritan bicycles.

The United States Tire Co. (New York) showed various styles of the United States, a mechanically-fastened tire, held in place by bands of steel encircling it, which are fastened by wedged shaped clamps. It is the invention of George H. Chinnock, patented in 1894, manufactured so far by the Manhattan Rubber Manufacturing Co., and listed at $15 per pair.

The Mechanical Fabric Co. (Providence, R. I.) were represented by the Flexifort double-tube tire, laced and cemented, which has been described in THE INDIA RUBBER WORLD, and by the still newer Conqueror, which has been brought out in response to a demand for a tire of the single-tube type, manufactured on the same principles with respect to material and construction.

The Indianapolis Rubber Co. manufacture the I. C. Indianapolis cement) tire, with continuous or butt end tubes, as desired, and the newer Crescent detachable tire, which is guaranteed to fit any rim. The latter is the invention of Mr. Knadler, the factory superintendent. Both types are listed at $12 for the 28-inch size. The company are also licencees for the manufacture of the G. & J. tires.

The Tillinghast Manufacturing Co. (Providence, R. I.) showed their new detachable tire, with beaded edges fitting into recesses in the rim, the latter having a piece of steel fastened just over the recesses, for the purpose of holding the tire in place. This tire is made at the Akron Rubber Works and is listed at $15.

H. A. Lozier & Co. made an exhibit of their Cleveland bicycles which afforded no suggestion of the big fire which destroyed their works two months ago. They had previously manufactured their own tires—which they call the Cleveland or Cleveland Thread—and have arranged to continue this feature of their work. They have adopted this year the Webb cemented fastening, which will be described elsewhere.

The Keystone Rubber Co. (Erie, Pa.) exhibited two tires—the Keystone detachable, mechanically fastened, having the usual beaded edges and fastened by a string fastened around the tire several times, and the Mooney, which is of the laced and cemented double-tube variety. The Keystone concern, now being incorporated, will succeed the Erie Rubber Co.

Charles E. Duryea's new tire was shown at the stand of the Eastern Rubber Manufacturing Co. It resembles the laced and cemented type, except that, instead of being cemented to the rim, it has three small wires encircling it which grip the rim on the outside, instead of on the inside, as is usual. The tube is butt-ended, and is removed through slits in the side of the cover which rests in the rim. It will be manufactured by the Indiana Rubber and Insulated Wire Co., at Marion, Ind.

The Webb detachable tire is fastened to the rim by an ingenious arrangement in which a wire is quickly tightened or loosened with a key. G. S. Webb is the inventor and the patent bears the date of May 15, 1894. It is marketed by Parkhurst & Wilkinson (Chicago), who are large dealers in bicycle sundries. Two or three rubber companies have made some of these tires.

The real novelty of the show in the way of rubber was Edward T. Pickett's armored bicycle-tire. It is a hosepipe tire with a flat bearing surface, the full width of which is encircled by a flexible steel band measuring $\frac{1}{16}$ or $\frac{1}{8}$ of an inch in thickness. Besides being non-puncturable, it is claimed that this tire has advantages on many roads over the round tire; that it will not hug every inequality and depression in the road, but will ride over them more freely than an elastic rubber surface would; that it will be retarded less by friction on many surfaces than rubber; and that it possesses as much resiliency as the standard single-tube tires. In addition to the band the principal feature is a series of interlocking ridges by which, without the use of cement, the tire is kept from rolling or creeping. The armor is kept in place by ears or small flanges, at short intervals, bent down so as to clasp the rubber. This tire was exhibited by Warson & Pickett, of Buffalo, N. Y., the samples having been manufactured by the Mechanical Rubber Co. (Cleveland, Ohio.)

Of course no account of this show would be complete without particular mention of the tires of the Gormully & Jeffery Manufacturing Co. (Chicago), although they are referred to in more than one of the preceding paragraphs. No other concern in the United States, perhaps, has done more than the "G. & J." company to popularize bicycling, and it is now their opinion that "the detachable tire is accepted as the standard tire of to-day." All the G. & J. tires this year will be corrugated, or non-slipping, unless ordered smooth.

At the time of writing this article all the leading bicycle-manufacturers have not brought out their catalogues for 1895, while those who have done so have not thereby lost the opportunity to supply their customers with the new tires which may have been brought out meanwhile. In the list which follows will be found the names of a number of bicycle-manufacturers whose catalogues have been received, with the tires which they have expressed the intention of using during the present year:

The Yost Manufacturing Co., Toledo, Ohio (Falcon bicycles)—Yost Detachable, Morgan & Wright.

Ames Manufacturing Co., Chicopee, Mass., (Ames)—Flexifort, Palmer.

George N. Pierce & Co., Buffalo, N. Y. (Pierce)—Wizard, New York, Morgan & Wright, Gormully & Jeffery, Dunlop, Palmer.

Grand Rapids Cycle Co (Clipper)—Gormully & Jeffery, Morgan & Wright, Palmer.

Syracuse Cycle Co. (Syracuse)—Morgan & Wright, New York, L. C. Smith.

William Read & Sons, Boston (New Mai)—Akron; Dunlop or Gormully & Jeffery, $5 extra. Cheaper wheels—Morgan & Wright.

Western Wheel Works, Chicago (Crescent)—Morgan & Wright; Gormully & Jeffery, $5 extra except on highest-priced wheels.

O. J. Faxon & Co., Boston (Puritan)—Puritan, Dunlop.

Queen City Cycle Co., Buffalo, N. Y. (Erie)—Flexifort.

Cortland Wagon Co., Cortland, N. Y. (Diana)—Morgan & Wright, regularly; Gormully & Jeffery, Palmer, optional.

Remington Arms Co., Ilion, N. Y. (Remington)—Palmer, Dunlop.

Buffalo Cycle Co. (Envoy, Fleetwing)—Morgan & Wright; Dunlop or Gormully & Jeffery, $5 extra.

Central Cycle Manufacturing Co., Indianapolis (Ben Hur)—Dunlop, Morgan & Wright, Wizard.

The Light Cycle Co., Pottstown, Pa. (Several models)—Neverslip and Dunlop, regularly; Vici and Gormully & Jeffery, optional.

E C. Stearns & Co., Syracuse, N. Y. (Stearns)—League, regularly; Morgan & Wright, New York, Dunlop, Palmer, L. C. Smith, optional.

Pope Manufacturing Co., Hartford (Columbia and Hartford)—Columbia and Wizard, regularly; Dunlop optional.

Demorest Manufacturing Co., Williamsport, Pa. (Demorest)—Morgan & Wright, Palmer, Gormully & Jeffery, Dunlop, New York.

W. H. Wilhelm & Co., Hamburg, Pa. (Wilhelm)—Morgan & Wright, New York.

Sterling Cycle Works, Chicago (Sterling)—Dunlop, Palmer, Morgan & Wright.

Ames & Frost Co., Chicago (Imperial)—Morgan & Wright and Palmer; Webb and Gormully & Jeffery, $5 extra.

R. H. Wolff & Co., Limited, New York (Wolff)—Palmer, New York, Hartford, Dunlop, United States.

Plymouth Cycle Manufacturing Co., Plymouth, Ind. (Smalley)—Morgan & Wright, regularly; Gormully & Jeffery, Palmer, Dunlop, New York.

Hulbert Bros. & Co., New York (Majestic)—Morgan & Wright.

Warwick Cycle Manufacturing Co., Springfield, Mass. (Warwick)—Morgan & Wright, Hartford, Dunlop.

A. M Scheffey & Co., New York (Wynnewood)—Morgan & Wright; Dunlop, Gormully & Jeffery, $5 extra.

H. A. Lozier & Co., Cleveland (Cleveland)—Cleveland.

A. G. Spalding & Bros., New York (Spalding)—Akron, Morgan & Wright, Perkins, Palmer, Gormully & Jeffery, Dunlop.

Black Manufacturing Co., Erie, Pa (Tribune)—Morgan & Wright, Hartford, Palmer, Dunlop, Akron.

Liberty Cycle Co., New York (Liberty)—Liberty—same as Perkins.

Gormully & Jeffery Manufacturing Co., Chicago (Rambler)—Gormully & Jeffery.

The Winton Bicycle Co., Cleveland (Winton)—Morgan & Wright, regularly; Wizard, Dunlop, optional.

A. Featherstone & Co., Chicago (Several models)—Morgan & Wright; Dunlop or Gormully & Jeffery, $5 extra.

Indiana Bicycle Co., Indianapolis (Waverley)—Waverley.

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## RUBBER TIRES FOR CARRIAGES.

THE success of the pneumatic bicycle-tire has encouraged nearly all the manufacturers to make special efforts to produce tires on the same principles suited to wheels of other vehicles. What has been done in the manufacture of sulky-wheel tires everybody knows who is interested in trotting horses. What has been attempted by the companies already named in connection with carriage-wheel tires is worthy of special mention.

Morgan & Wright have been encouraged by the invention of Mr. Young's easy-repair feature, already described, to offer their well known tires in sizes suited to the carriage trade. Their representative at the cycle show assured THE INDIA RUBBER WORLD that they were about to invest $10,000 in molds for carriage-tires, in sizes from 32 to 46 inches. They had found the carriage trade interested from the Atlantic to the Pacific, but they mentioned the firm of Reed & Curtis, of Worcester, Mass., as especially interested in their experiments, among the concerns in a position to push the rubber tires among the carriage trade.

The Hartford Rubber Works Co. are also convinced that the early future will afford an important future for the carriage tire trade. They are making single-tube tires from the 4½ pound sulky set up to 20 pounds for park buggies. Among the carriage manufacturers who are already using the Hartford pneumatic tire are the Boston Buckboard and Carriage Co. (New Haven); the Michigan Wheel Co. (Lansing, Mich.); the Mansuy Carriage Co. (Hartford, Conn.); and the Columbia Pneumatic Wagon Wheel Co. (Oneida, N. Y.) This is different, by the way, from the Wizard single-tube pneumatic tire, also manufactured by the Hartford company, which has been so widely used on sulkies. The prices quoted are from $11 each for 30-inch tires (either 1½ or 2 inches in diameter) to $13.50 each for 40-inch tires.

The Gormully & Jeffery Manufacturing Co. are now making a special feature of vehicle-tires, of which they showed three forms, the tires being the same in construction as their bicycle-tires except that smooth treads are offered instead of the corrugated. Negotiations are mentioned as being in progress for supplying these tires to the Studebaker Co., of South Bend, Ind., and Kimball & Co., of Chicago, who are among the most important manufacturers of vehicles in the country.

The New York Tire Co. exhibited tires suited for vehicles of every size, up to ambulance tires capable of supporting a vehicle weighing 5000 pounds. The United States Tire Co. also offer their new tire in sizes suited for use on carriages.

An interesting feature of the cycle show was a new invention exhibited by S. N. Brown & Co. (Dayton, Ohio), being a steel band for wood rims for wheels of any size. Its object is both to prevent wood rims from splitting and to keep them "in line," while fitting them to hold any pneumatic tire in the market. On account of the lightness of the rims on standard bicycles now in use it is not expected that the demand for the new device will be very great in this department of trade, but it is expected that it will be widely used in the carriage-wheel trade, with the coming introduction of the rubber tire. With such a band on rims, the latter can be made much lighter than heretofore, thus removing the objection sometimes made that pneumatic tires make carriage-wheels too large, and therefore unsightly. The wheels fitted with this rim shown at Madison Garden were equipped with Morgan & Wright tires, and the gentleman in charge of the exhibit said that other rims were being made to fit the Dunlop tires.

## RUBBER INDUSTRIES OF CANADA.

"NO department of manufacturing in Canada," says the Toronto *Shoe and Leather Journal*, "has shown the advance that the rubber business has made within the past ten years. The quality of the product has steadily improved, and the volume of trade has increased to such an extent that we have three concerns when one alone existed a decade ago, all of them with increased capacity, and goods so far ahead of those turned out even five or six years ago as to leave little room for comparison." Here our contemporary quotes from THE INDIA RUBBER WORLD some recent statistics on the subject, and adds: "All this goes to show that in this line of home industry we are making progress. In shoes our goods to day compare favorably with the products of the best mills on the continent."

One of the successful industrial establishments in the Dominion is the Granby Rubber Co., whose factory has now been running six years. When it was started the rate-payers of Granby, rather reluctantly, voted in favor of a subscription to the stock of the company by the town. Recently the mayor, Mr. S. N. C. Miner, who is also president of the rubber company, handed to the town treasurer the company's check for $15,330, being the par value of the stock held by the town, and a balance of interest. This is regarded as an evidence of the company's success and as justifying the public subscription to its stock at a time when such support was much needed.

# THE WORK OF THE BRAZILIAN RUBBER-TREE TAPPERS.

*By M. F. Sesselberg (Pará).**

THE business of rubber-gathering, after the forest has been reached, begins with the opening of a "road,"—a winding pathway just wide enough to allow a man to pass from tree to tree. Usually 100 rubber-trees are connected by one of these roads, the intervals between them varying from twenty feet, or less, to hundreds. While one man's road may not be more than a quarter of a mile long, his nearest neighbor may have to walk five or six times as far to reach the same number of trees.

There is as much difference in the milk from rubber-trees as in the milk from different cows. The consistency of the sap varies, some yielding a larger and some a smaller proportion of solid rubber. In the same road one tree may yield a thick, creamy sap, while the next will give a watery one, or even nothing at all, the "flow" being so slight that the sap merely puts in an appearance, without reaching the cup underneath. Where several "taps" are made on the same tree, some may run freely, while others give nothing at all. On other trees, again, all the taps may run freely. In view of these differences in quality and quantity of the sap, the yield of a road, instead of single trees, is taken as a standard in any rubber camp.

One man can easily tap 100 trees daily, placing on each five or six cups to catch the sap. These trees, on what is called a good road, will yield, at the commencement of the crop season,† about 22 pounds of sap for each tapping. But all the roads are not equally good, and one with the yield just mentioned may lie next to another with a yield of only 10 pounds of sap. On the lower Amazon, in a field containing several thousand rubber-trees, not more than 10 or 12 pounds of sap can safely be counted on for each 100 trees per day. Supposing the trees to be tapped regularly for twelve weeks—the extent of the tapping season—the total yield per tree would be about 7 pounds of sap, or 3½ pounds of cured rubber. But a rubber-gatherer can, without great exertion, work two roads during a season, making, at the average yield here mentioned, 700 pounds of rubber. An active, hard working man can double this product, and can do even better with the help of his wife (seldom with "benefit of clergy") and children. In partially-cleared forests a rubber-gatherer can care for more trees.

In the state of Amazonas the average size of the rubber-trees is larger, and the yield is greater. This is because rubber-gathering has not been practised there so long, and the trees have been allowed to mature fully before being tapped. In the lower districts, where the rubber industry had its origin, the yield per tree is much less now than formerly. A man who worked in the rubber fields forty years ago once told me that he had known roads of 100 trees to yield 40 to 45 pounds of sap per day, while his early employer used to complain because the yield had fallen from 60 and 65 pounds. To-day an occasional rubber tree will sometimes yield two pounds at a single tapping, but there are more on which the scanty exudation dries on the bark without reaching the cup.

The quantity of sap required for making a pound of India rubber varies more than the quantity of milk needed for a pound of butter. While two pounds may be given as the average, very much more is sometimes necessary. The yield of rubber from a given measure of sap is greater at the beginning of the season than at its close, the consistency of the sap steadily diminishing.

The age at which rubber-trees become fit for tapping depends upon their surroundings. In the dense forests they will hardly bear tapping before the age of twenty five or thirty years; in partially-cleared forests, they can be tapped at sixteen years, while on lands from which the other growth has been removed, rubber-trees begin to yield at ten years and, if carefully treated, appear not to suffer from the tapping. The trees in cleared spaces grow much more rapidly than those in the dense forests. Without doubt the application of science would increase the yield of sap, and also the proportion of solid rubber contained in it, but this good result is not yet to be looked for. The rubber-gatherers will trust to "the prodigality of nature" until all the unexplored fields have been opened and all the existing trees have been exhausted. How long that will be in the future may be imagined when one reflects that trees continue to be tapped that have been yielding rubber ever since it became a marketable commodity.

The season for tapping trees may last for three months, and sometimes six, the operation being performed daily. This is determined by the size of the trees and the richness of the yield. In some cases the trees are tapped only every other day. In others, the trees are tapped daily in the season, but only in alternate years. A rubber-gatherer who owns nothing in the locality where he works sometimes taps the trees so heavily as to kill them in a single season, but such a man will find it hard to get a road in the same field again. These roads, by the way, often exist year after year, and have a rental value.

The cups used for catching the rubber-milk as it oozes from the tree are now mostly of tin, though in some places cups of burnt clay are still used, being considered superior. The making of the latter requires much time, however, and they are liable to break, so that tin cups are rapidly displacing them. The clay cups are attached to the rough bark of the tree with the aid of a dab of wet

* This article has been suggested by the receipt during the past year of no fewer than sixty-nine letters of inquiry from INDIA RUBBER WORLD readers, and is written with the idea that the information which has been asked for may prove of interest to other readers. It is not necessary to repeat here the information contained in my previous article—"The Rubber Trade as Conducted in Pará"—published in THE INDIA RUBBER WORLD of May 15, 1894. Therein will be found many facts in relation to the various districts into which the Amazon rubber country is divided. M. F. S.

† The crop year is measured from the first of July.

clay, while the tin cups are held in place by turning down the top and pressing it into the bark. The tins could be improved by the addition of some sharp points to the back of each, to drive into the bark. The cups are made in three sizes—4, 6, and 8 ounces. The smallest size is used on the lower Amazon, the middle-sized ones in Amazonas, in the developed fields, and the largest size in virgin fields. In the latter case smaller cups are likely to be substituted before the crop is finished.

As in every other industry, there are careless, shiftless workers in rubber-gathering. Such persons, when finishing their day's labor,* will throw the empty cups on the ground at the foot of the trees, with the "drippings" left within. A more practical man, when he begins the season, will drive into the ground by each tree in his road a stick in which there are as many saw-cuts as he has cups for the tree, while underneath is a box in which the last drop of rubber is caught. These drippings at the end of the season represent a no small item.

A rubber-gatherer who is fully conversant with his business and is desirous of protecting his trees will work as follows: he will first mentally divide the lower part of the trunk—beginning about one foot from the ground and going as high as he can reach with his hatchet—into six sections, representing the six working days of the week. On Monday, we will say, he will commence work by making taps about eight inches apart around the trunk, forming a circle as high as he can reach. Under each incision he will place a cup to catch the sap; eight will be needed for a tree sixty four inches in circumference. On Tuesday the same tree will be tapped on a circle about a foot lower down, the incisions being directly under those made on the first day. By continuing this process to the end of the week, the circle of taps on Saturday will be about a foot from the ground, and forty-eight incisions will have been made,—*i.e.*, six circles of eight taps each. The next week he will begin by tapping again in the circle of the previous Monday, but tapping between the incisions in the circle. When, after a time, no room for new incisions can be found in the original circles, new circles are started a short distance below, and thus the work of cutting into the bark is continued until the whole surface of the tree is covered with taps. It will then be necessary for the tree to rest for the remainder of the year—possibly for all of the next year. If the tapping has been properly done, by which is meant if the bark has been cut into no more than is necessary, and the wood not cut into at all, the incisions will heal over so as to leave no sign.

Much skill is needed in tapping rubber-trees. Deep incisions damage the trees, but if they are too shallow the sap will not flow. If the tapper, on failing at first to go deep enough, attempts to strike again in the same place, he is likely to miss his aim, thereby making two incisions instead of one, and chipping out a bit of wood between them, which wounds the tree. Some superstitious people try to make the cut in the form of a cross, "for luck."

Having tapped the trees in his road early in the day, and placed the cups in position, the tapper returns home for breakfast. Later he starts out with a bucket or other receptacle to collect the sap from the cups, beginning with the first tree tapped, and going over the same route followed in the morning. The milk does not run more than three hours. At the end of his road he will find himself near his hut again, where he next proceeds to smoke the sap over a fire of palm nuts, as already described more than once in THE INDIA RUBBER WORLD.

In the case of some large trees two series of circles are described in the tapping, the upper series being reached by means of a staging built around the tree. Such treatment is likely to prove fatal to the tree, however. It is good management to avoid tapping during the flowering season of the rubber-tree, which is during September. The best months for tapping are July, August, October, November, and sometimes December.

The rubber-curing machine of Senhor Coutinho, described in THE INDIA RUBBER WORLD of March, 1894, has operated successfully so far as introduced, but it still needs some improvements, which he is seeking to have made. The merits of the machine, however, are apt to be overlooked by those who always cling to old ways as long as they can. Then, too, the cost of the machines as made in Pará is excessively high.

In answer to several correspondents it may be said that a personal visit to the Amazon states doubtless would prove a more satisfactory source of information than any letters that can be written from here. Life is easy in these latitudes, though somewhat oppressively *de rigeur* in the cities, where Portuguese customs still prevail. In the country, especially in the rubber fields, it is quite another matter. There a man may go about dressed in a light flannel hunting-shirt and cotton trousers, a coat and waistcoat being superfluous. A big straw hat and high hunting boots are needed for going about, besides which one's outfit generally includes a rifle, cigars, and a bottle of quinine—the latter as a precaution against possible fevers.

* Laborers are paid by the day, at the rate of 10 milreis, with shelter and provisions extra.

## RUBBER CLOTHING A HUNDRED YEARS AGO.

AN interesting fact in regard to the water-proofing of clothing in the last century is recorded in the *Journal of Natural Philosophy, Chemistry, and the Arts*, of London, for September, 1800. In a letter from Clyde, signed "J. A.", this paragraph appears:

"In No. 37 of your instructive journal I observe that Mr. James Howison [the discoverer of India-rubber in the East Indies] has made several promising essays towards obtaining a valuable manufacture by covering cloth with the East Indian caoutchouc. In confirmation of the practicability of this, I have to mention that I have had an opportunity of knowing that hats have been covered with it in South America. *Capotas* (a kind of cloaks common to the Portuguese and Spaniards) have also been covered with this substance; and I have known *capotas* made in Portugal, and sent to Brazil for this express purpose. It is evident that any article of dress covered with caoutchouc must be perfectly impervious to wet; but the weight of the *capotas* (which it was said the manufacturers could not remedy) was so enormous that they could only be serviceable as boat cloaks."

# INDIA-RUBBER MISCELLANY.

A CRUISER of the United States navy has been sent out to protect American interests on the east coast of Africa and in Madagascar. American interests in that island are very much larger than is generally supposed. The export trade of Madagascar with this country is second only to her export trade with Great Britain, and India-rubber forms an important item in it. A recent American consul-general,—the Hon. John L. Waller, of Kansas, who is still at Tamatave,—secured from the native government a sweeping India-rubber monopoly, which is said to have been one of the causes of the quarrel between France and the queen of Madagascar, out of which has grown the existing war. It will be remembered that France has long claimed to exercise a protectorate over the country of the Hovas, a tribe in Madagascar numbering some 5,000,000 souls.

* * *

INTEREST in extending commerce with the Kongo rubber country seems to be at a low ebb at Washington. Congress has discontinued the appropriation for a United States commercial agency at Boma, at a time when every country in Europe is looking to the new state with eager anticipation of developing trade there.

* * *

MR. ALBERTO FALCON, who has been appointed Peruvian vice-consul at New York, has been for fourteen years connected with the firm of W. R. Grace & Co., and is now their general manager. He has taken great interest in the development of the India-rubber trade, with which he has made himself thoroughly familiar. He is well known in social and financial circles in New York, and is a member of several clubs.

* * *

AMONG the patents granted at Washington on January 1, No. 531,781 was for the rubber-curing machine invented by Sr. Manoel Vianna Coutinho, of Pará, and for which the Brazilian government has granted a patent. No model was filed in the United States patent office, but a complete description may be found in THE INDIA RUBBER WORLD for March 15, 1894, together with an engraving based upon a photograph of the machine.

* * *

A SON of the late Charles Goodyear is taking a prominent place among the architectural writers of the day. It is Professor William Henry Goodyear of New York, who was born in 1846, received a liberal education, and enjoys a high reputation as an instructor in and writer on the history of art. He has contributed some papers recently to the *Engineering Magazine*, of which one is on "Historical Architecture in Current Use."

* * *

NO little consternation has been caused in certain quarters by a recent decision by Justice Gaynor, of the New York Supreme court, that rubber-stamp signatures are not legal. It is said that Surrogate Owen T. Coffin, of Westchester county, has for years signed official papers with a rubber stamp. Among the estates which might be affected by a rigid application of Justice Gaynor's decision are those of the late Samuel J. Tilden, the late I. M. Singer, of sewing-machine fame, and many others of importance.

* * *

A REPORT has been printed that some of the Chicago capitalists whose interest in the matter has been mentioned in THE INDIA RUBBER WORLD from time to time, have purchased about 232,500 acres of rich Mexican lands, in the state of Oaxaca, near the Pacific terminus of the new Tehuantepec railway, one object being the cultivation of India-rubber on a large scale. The federal government offers a bonus of 4 cents and the state government 1 cent additional for every tree planted.

* * *

TWO more rubber-shipping ports are soon to have cable connection with the outside world—Bluefields and Greytown, in Nicaragua, which will be connected with the Galveston cable service by a telegraph line now being constructed.

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THE new tariff schedules of Santo Domingo impose a duty of $12 per dozen upon imports of common rubber coats, and $24 per dozen upon rubber coats of finer grades. No other rubber manufactures are specified.

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NO Gutta-percha is gathered outside of the East Indies, as everybody in the trade knows, yet the customs officials of the United States and Great Britain continue to import "Gutta-percha" from South America. This is, for the most part, the Balata gum, while Tuno gum, from Nicaragua, is also sometimes classed as Gutta-percha in the import tables.

* * *

BALATA continues to be vigorously urged upon the market, but its consumption is of slow growth. Occasionally a consignment reaches New York in the milk state, but only for experimental purposes, according to Mr. J. P. Earle. When asked whether Balata milk might not be used advantageously in coating dress shields, he replied that the milk was apt to spread inconveniently, and prove hard to manage. It is believed that Balata has been used by some of the recent experimenters in the manufacture of golf balls in America.

* * *

FROM Germany comes an account of a neat little India-rubber flask, sold by a bicycle firm, in which the beer loving wheelmen may carry refreshment upon the road. The flask is said to be provided with a length of rubber tubing, by means of which the rider may reach its contents without slackening his pace or removing the flask from its pouch.

* * *

BEAUTIFUL SNOW.

IT snows! cries the rubber-man
All radiant with glee.
The snow that sells our rubber shoes
Is just the stuff for me.

I've prayed and prayed and prayed for snow,
As hard as e'er I can.
This proves that an answer sometimes comes
To the prayer of the rubber-man.

—*Shoe and Leather Facts.*

* * *

THE story is told of how a rubber overshoe recently saved the life of a horse in Brooklyn. A trolley wire snapped and fell across the back of a gray mare. She dropped as though shot and might have died but for a passing motorman who knew his business. With a rubber to protect his hand he pulled the wire away from the animal, which was then revived and taken away to a stable.

# BRIEF ABSTRACTS OF RECENT RUBBER PATENTS.

AMONG recent patents issued by the United States Patent Office, embodying applications of India-rubber or Gutta-percha to a greater or less extent, have been the following. It is not practicable here to do more than to note the use of rubber in each case, with sufficient detail to enable those who are interested to decide whether or not to look into any particular patent more fully:

*TIRES.*

No. 530,803.—Pneumatic Tire. Cevedra B. Sheldon, Brooklyn, N. Y., assignor to Levi W. Case, Montclair, N. J.

A pneumatic bicyle tire having an armor formed of a pair of thin plates having each a continuous outer or bearing portion, and lateral fingers, held to lap and projected to form a continuous metal deflecting portion, the fingers having turned up or bead portions joined.

No. 530,988.—Steel-spring Tire. John S. Eddy, Denver, Colo., assignor of one-half to Milton Smith, same place.

A tire for bicycles and other vehicles, consisting in combination, of a series of independent, circular flat metal spring rings arranged in contact, cross bars uniting circular rings at opposite points, above and below each of the circular rings, independently secured to the bars, the whole having a rubber covering.

No. 531,335.—Pneumatic Tire. Charles H. Roth, Cincinnati, O.

The combination with the air tube of a pneumatic tire and the wheel rim, of a flange secured to the air tube so as to leave the wall of the air tube opposite its central portion free therefrom, an elastic sleeve carried by the flange and communicating with the interior of the air tube, an air inlet and outlet tube arranged within the sleeve and extending normally slightly beyond the inner face of the flange, the sleeve being secured near to its outer end to the air inlet and outlet tube, and having a portion of its bore toward the air tube of a slightly greater diameter than the diameter of the air inlet and outlet tube, and projections on the inner face of the flange, the elastic diaphragm formed of the free portion of the wall of the air tube, opposite the central portion of the flange, having openings therein to one side of the air inlet and outlet tube.

No. 531,436.—Pneumatic Tire for Bicycles. Andrew C. Davidson, St. Thomas, Canada.

The combination of the levers having their contiguous ends pivotally connected together and provided at their outer or free ends with lugs, and a securing wire having its ends connected to the levers at intermediate points in the length of the same.

No. 531,447.—Carriage-Wheel. Edward S. Renwick, Milburn, N. J.

A permanently moist cork tire for a carriage wheel constructed of cork impregnated with a non-drying substance and inclosed in a tubular cover of hoop form.

No. 531,608.—Bicycle-Tire. Frank M. Ashley, Hawthorne, N. J.

In a bicycle tire, a felly having a flat bar face and springs connected therewith, in combination with a thin metal tube, open centrally along its inner face and having flanged edges adjacent to the sides of the felly, means for connecting the flanges to the felly and a rubber shoe outside the tube.

*MECHANICAL GOODS.*

No. 531,620.—Lawn-Sprinkler. Thomas Maher, Cleveland, Ohio.

As a new article of manufacture, a sprinkler consisting of a case having within it an annular chamber opening through the top of the case, a central post rising from the floor of the chamber, and provided with lateral, basic passages opening into a vertical passage in the post, and an external extension projecting from the wall of the case in such a manner that a line representing the horizontal center of the extension is remote from a parallel line passing through the center of the chamber, the extension having a large, outer, threaded opening communicating with the chamber through a contracted orifice.

No. 530,678.—Process of Manufacturing Samples of Hose, etc. William F. Bowers, San Francisco, Cal.

The method of producing a sample sheet or piece for displaying the quality of the material, used in the manufacture of hose, belting, packing, or similar articles containing rubber and canvas or other woven fabric, which consists in placing upon the sheet of canvas or woven fabric a protecting strip which covers a portion of the canvas or woven material, coating the surface of the canvas or woven fabric and protecting strip with rubber, and thence removing the protecting strip and such portion of the rubber coating as adheres thereto, thereby leaving the portion of the canvas or woven fabric covered by the protecting strip free or exposed, whereby the material may be inspected.

No. 531,578.—Hose-Mender. Arthur Van Dyke, Orange, N. J.

A hose mender, comprising a tube, a shell surrounding each end of the tube and in the form of the frustrum of a cone, with the small end united with the tube near the end thereof, and a bead on each end of the tube.

*DENTAL RUBBER.*

No. 531,092.—Process of Forming Dental Plates. Minor P. Boyd, Atlanta, Ga.

The improved process of forming the exterior gum surface of a dental plate, which consists in setting artificial teeth on wax, applied upon the inner or lingual side of a base or model, and removing any wax that may protrude between or adhere on the front side of the teeth, then applying a thin coat of adhesive liquid or semi liquid plastic material around the front side of the denture, next laying a strip of soft rubber upon the coat of plastic, and finally applying a thicker coat of plastic material over the rubber strip, thus embedding, covering and concealing it, and building up a continuous exterior gum.

*DRUGGISTS' SUNDRIES.*

No. 531,132. Combined Stopper and Filler for Bottles. Isaac Pomeroy, Newark, N. J.

A combined stopper and liquid filler, comprising therein, in combination, with a filling tube and a compressible bulb arranged thereon, a non-compressible shield arranged over the bulb and having an opening or openings therein, for the insertion of the finger, or finger and thumb.

*INSULATED WIRE.*

No. 530,517.—Process of Manufacturing Insulating Compositions for Electrical Purposes. Alfred N. Ford, London, England.

The process consists, first:—in coating or saturating certain fibrous and other substances with a drying oil which has been previously partially oxidized, and then drying such fibrous substances so treated, and when dry, re-coating them again and again, each time drying the previous coat sufficiently to take another coat until the mass has increased in weight by such coating or saturation from fifty to two hundred per cent. approximately, and subjecting the material so treated to the action of grinding or amalgamating rollers, and subsequently adding a quantity of India-rubber, Gutta-percha, or similar material, say twenty-five per cent. and finally subjecting the mass again to the action of grinding or amalgamating rollers or analogous means of mixing.

*STATIONERS' SUNDRIES.*

No. 530,135.—Stamp or Envelope Moistener. Adolph Stuebner, Bennett, Pa.

In a device of the class described, the combination with a

reservoir or bulb, of a discharged nipple comprising a looped tube in communication at its ends with the interior of the reservoir or bulb and having a transversely disposed perforated portion forming a distributing tube, and an elongated nozzle or outlet communicating with the distributing tube.

*MISCELLANEOUS.*

No. 230,085.—Hot-Water Bandages for Treating Horses. Robert Bustin, Boston, Mass., assignor of two-thirds to John R. McConnell and James A. Van Wart, St. Mary's, Fredericton, Canada.

An abdominal pad consisting of a sheet of rubber having straps and buckles at its ends, a series of tubes arranged transversely to the length of said pad and formed or united in one piece with the latter, a filling pipe arranged along one longitudinal margin of the pad, and communicating with one end of all the tubes their other ends being closed, said filling pipe being integral with the communicating pipes and having its end turned into parallelism with the series of tubes and provided with a plug to close its extremity, the other end of the filling-pipe having an extension closed by a plug.

No. 530,528.—Elastic-Tread Horseshoe. William R. Howe, Dayton, Ohio.

In a horseshoe, the combination of the metal body having a continuous groove on its under side with an opening in its front wall at the toe, and an elastic vulcanized rubber packing fitting and secured in said groove and toe opening, and with that portion in the toe opening made harder than the rest.

No. 530,563.—Attaching-Socket for Tubing. John J. Vautley, Brooklyn, assignor of one-half to John Grierson Law, New York, N. Y.

The combination in an attachment socket, of an elastic tip portion adapted for yielding at its outer part when applied to a gas nipple or connection, and a ferrule attached to the rear end of the tip, and adapted for connection thereto of flexible tubing, the ferrule at its forward end having an interlocking flange or part entering the tip, the tip extending rearward within the ferrule behind the interlocking flange or part.

No. 531,103.—Bowling-Ball. Frederik G. Dokkenwadel, Union City, Ind.

A bowling ball consisting of the core having the central and side sockets or cavities, elastic linings for the cavities, weights closely fitting in the linings and an elastic outer covering on the core.

No. 531,505.—Life-Preserver. Jeannette P. Brown, Salt Lake City, Utah.

In a life-preserver, the combination of two or more separate air-cushions; each air-cushion being divided into separate air-tight compartments, a common mouth piece and tube connecting with each of the separate compartments of each air-cushion, the openings from each of the compartments to the tube, and independently and positively operating valves for opening and closing the connections, the band to which the air-cushions are attached, the head straps which hold the band up and the additional straps for holding the cushions down in position.

*TRADE-MARKS.*

No. 25,567.—Rubber-Belting, Packing, and Hose and Rubber Foot Wear and Wearing Apparel. Harry E. Wagoner, St. Louis, Mo. Filed Oct 29, 1894.

Essential Feature.—The representation of a cat in a standing position in connection with the words "Hoo-Hoo." Used since Oct. 15, 1894.

No. 25,661.—Rubber Packing Rings. Crescent Manufacturing Co., St. Louis, Mo. Filed Nov. 5, 1894.

Essential Feature.—The word "Crescent" and the symbol of a crescent. Used since August 15, 1894.

No. 25,695.—Hose-Nozzles. The Eaton, Cole & Burnham Company, Bridgeport, Conn. Filed Nov. 21, 1894.

Essential Feature.—The word "Gem." Used since October, 1884.

No. 25,743.—Wall-coverings, Steam Packings, and Other Goods Made Wholly or in Part of Asbestos. The New Jersey Asbestos Company, Jersey City, N. J. Filed Nov. 30, 1894.

Essential Feature.—The compound word "Carbo-Beston." Used since October 1, 1894.

No. 25,744.—Wall-Coverings, Steam Packings, and Other Goods Made Wholly or in Part of Asbestos. The New Jersey Asbestos Company, Jersey City, N. J. Filed Nov 30, 1894.

Essential Feature.—The word "Rubesto." Used since October 1, 1894.

No. 25,755.—Waterproof Cloth. The Firm of William Wilford, Tamise, Belgium. Filed Nov. 9, 1894.

Essential Feature.—A device of a loaded railway wagon, the word "Matchless" thereon and the letter "T." Used since September 1, 1894.

## HARD RUBBER CASTING PATTERNS.

*By John T. Usher.*

INDIA-RUBBER has been employed by the writer with very satisfactory results for making small patterns. Such patterns can be made and finished more cheaply than those made of metal, and in many cases more cheaply than those made of wood. Patterns made of rubber are especially adapted to card pattern work, which consists of a number of patterns grouped together and attached to a metal plate, or upon a wooden board, together with the gate and spun channel pattern, the iron-molder being enabled thereby to produce at one operation, a mold complete, ready for pouring in the metal. The rubber patterns are also eminently adapted for use in connection with a follower board, for grouping generally or to be used singly. The advantages claimed for rubber patterns are: (1) their extreme lightness; (2) durability; (3) strength; (4) freedom from shrinkage and warpage; (5) freedom from the attacks of water or acids, heat or cold under ordinary conditions.

It is presumed that all the readers of THE INDIA RUBBER WORLD are acquainted with the manipulation of rubber in a general way. Therefore only a summary of the methods employed in making the preliminary patterns and molds from and in which the subsequent patterns are produced, will be given.

The preliminary patterns can be made of wood, beeswax, modeling clay, or modeling composition in fact of any substance which can be shaped to the desired form and which will retain this form long enough to allow an impression to be taken in plaster of paris. In many cases the preliminary pattern can be formed all the more easily by making a face pattern of either of its sides. Then pour an impression of the face pattern and form the preliminary pattern therein or thereon with beeswax, and then pouring or making a plaster mold on or of that, as the case may be, the face pattern or mold upon or in which the preliminary pattern is formed serving as one-half of the mold. The other half mold being made by pouring or making a counter impression directly on or in the first impression of half mold, cutting rings, grooves, or depressions some distances from the mold surfaces proper to

locate the two halves of the mold in their respective positions.

The molds can also be made in plates or metal without any preliminary pattern in the usual manner, if preferred. When the plaster molds are to be used to make patterns in, they must, after being made, be invested in a metal flask. After the first pattern has been made, it may be used as a pattern for making all the subsequent plaster molds needed. When a preliminary pattern has been made or is available, the plaster molds should always be made directly in the flasks thereby avoiding the necessity of investing the molds after they have been made.

To pour an impression, and in making molds of plaster in order to get the best results the article to be poured should be first shellacked and allowed to dry, and then soaked in water for ten minutes or more, and then poured while it is still wet. If the article to be poured is made of some other material than plaster, it may be dipped in water and then poured while still wet, but on no account must oil or any greasy substance be used to insure an easy separation if the latter are to be used for making the patterns in.

In pouring an impression, the amount of water necessary to saturate the plaster is first poured into a soft-rubber bowl, a pinch of common table salt is then added and stirred in, the plaster is then added by shaking it out of a scoop in order to loosen it as much as possible, then let it stand a few seconds until thoroughly saturated; the surplus water can then be poured off, and the plaster stirred or mixed. If this has been done properly the mixture will then be of the consistency of thick cream. When salt has been added the plaster must be used immediately as it commences to set very quickly. In no case must the plaster be put into the bowl before the water, as it will nearly always come out lumpy after being mixed, and it is also liable to crumble away during the process of vulcanizing. In pouring an impression, a little of the plaster is first poured on the highest part and is then made to flow to and around the lower parts as quickly as possible by taking the article in the hand or hands and jarring it sharply, a little more plaster is then added again on the highest part and the jarring repeated, and so on until enough has been added. Should the jarring be omitted when pouring, or too much plaster be added at one time, the chances are that the work will be imperfect.

Should the shape of the molded article be such that the parts cannot be separated by inserting the point of a knife blade between them, without the risk of breaking, then the part that has been poured must be carefully cut away until the shell and surface can be seen through the plaster. This cutting can in most cases be done in such manner that the parts can be lifted away in large pieces, leaving the part it is desired to save intact.

In making hard rubber patterns where the body of the pattern or any part of it would be more than from $\frac{1}{4}''$ in thickness, it will be necessary to so arrange the molds as to produce a shell pattern.

When cores are used the plaster of which they are made must be mixed with carbonate of lime, as whiting, chalk, or marble dust, in such proportions as to allow of its being readily dissolved in acid after the patterns have been vulcanized. This removes the cores, the plaster of paris being in itself insoluble. A mixture of half plaster and half whiting will be found to be very satisfactory for making the cores.

If the patterns are immersed in muriatic, or sulphuric acid, the whiting will dissolve very quickly, leaving the plaster as a precipitate, which can be easily washed out with water, without in any way injuring the pattern. Paper also makes an excellent core for this purpose, in fact better than plaster. When metal molds are desired in preference to those of plaster it will be found easier and better to first make the plaster molds, and then after carefully shellacking them, to use them as patterns from which to cast the metal molds.

Before packing the plaster molds, the surfaces proper should be coated with collodion. After being packed they should be put into boiling water for a few minutes to soften the rubber prior to closing the molds. The pattern may then be vulcanized. After vulcanization they must not be taken out of the molds until thoroughly cold, otherwise they are liable to warp.

## THE PACIFIC CABLE AND GUTTA-PERCHA.

LORD JERSEY'S report on the recent Colonial Conference at Ottawa, which he attended in behalf of the British government, commends the proposed Pacific cable plan as sound, practical, and full of great advantage to the British empire. If parliament shall prove of the same mind this winter, it is reasonable to expect that work on the cable will not long be delayed. But Australia is too much interested to drop the matter, even if denied the help of the mother country. Her colonies have been agitating the subject since 1887, and that after having voted nearly $4,000,000 in subsidies to the Eastern Extension Co. for the cables now connecting the island with the Asiatic lines. The colonists believe ocean cables to be so good a thing that they want and are willing to pay for more. Canada is likewise interested, and it is worth noting that Sir Mackenzie Bowell, who presided at the Ottawa conference, has lately become premier in the Dominion government.

A cable across the Pacific would absorb an enormous quantity of Gutta-percha (one of the estimates covers 4,660,000 pounds), and it has been asked what would be the effect of such a demand upon the market. As was said in THE INDIA RUBBER WORLD recently, the supply of Gutta-percha seems always to be equal to the demand. But when a cable is to be constructed Gutta-percha is not bought in the open market. Cable work in England is done by concerns having an enormous capital, and their preparations are made on a large scale. When an unusual quantity of Gutta-percha is wanted, agents are sent, not to Singapore, but direct to the islands where the forests are, and the supplies are bought up in advance from the native collectors, at ordinary prices. Of course only large buyers of Gutta-percha could afford to adopt this method of dealing independently of the regular market channels.

The Earl of Jersey's report, above mentioned, fills a voluminous "blue-book" which has been sent to THE INDIA RUBBER WORLD, and which exhausts the subject of the Pacific cable up to date.

# THE GREATEST OF ALL RUBBER FACTORIES.

*By A. M. Stickney.*

A LETTER received to day reminds me of the fact that I promised the editor of the INDIA RUBBER WORLD a few lines while abroad. I have had so much to do however, and there has been so much to see that any letter writing, excepting that of the most urgent necessity, has been out of the question.

One of the pleasures of the trip has been to meet, everywhere, an old friend, in the shape of your valued publication. Two articles, "Russian Rubber Factories," and "An English View of the Rubber Shoe Trade," proved rather amusing to me, as well as to some of the parties referred to. If a comparison is made between some of the figures which I give here and some given previously, and they are found not to coincide, I assure you the fault will not be mine.

I propose to describe to you briefly the great "Russian-American India Rubber Co." of St. Petersburg. I have made this selection because they are so far removed from our own country, because some of their methods seemed so peculiar to me, and further because I believe it to be the largest single rubber plant in the world You will kindly note the word "believe" and at the same time allow me to give a few figures which will either prove or disprove my belief. In their plant they have two buildings twelve hundred and twenty-five feet long, and at right angles with these another one eight hundred feet long. Each of these is sixty-five feet wide and four stories high. A very simple calculation shows in these buildings alone, a floor space of a little over nineteen acres. In addition to these buildings are many others such as boiler houses, engine rooms, pumping stations, electric lighting plant, a vulcanizing building, stables, sheds, store houses and what not. About six hundred feet of one of the buildings has just been completed, and is now being fitted up for the manufacture of mechanical rubber goods. The entire plant is equipped with the Grinnell Sprinkler. While there I had the pleasure of witnessing the trial of the sprinklers that had been just put in the new extension. A very large fire of shavings and kerosene was started in the middle of the floor, and in a little more than a minute not only was the fire quenched but some of the onlookers drenched.

In order to supply present wants, the washing, grinding and mixing departments are run night and day. During this year (1895) an entire new plant is to be built on the old McIntosh property for which the foundations are all in. The old McIntosh factory is now used as a factory for leather boots, but during the coming summer it is to be vacated and, together with the new buildings, is to be turned into a rubber-shoe plant which will a little more than double their present production, and also supply additional mill room so as to render night work in that department unnecessary. A new machine shop has just been completed on these grounds, and is now being fitted with machinery. While speaking of the McIntosh plant, it may not be out of place to mention here the outcome of that venture with which our friend Mr. Thomas, late of the Pará Rubber Co., was identified. After five years of unsuccessful operation the Russian American Co. was asked to purchase the plant. The terms did not suit them, so they waited three years more and then bought out the whole outfit, land, buildings, machinery and stock for a sum which netted the stockholders just eight per cent. of their investment. During its entire existence the McIntosh Co. never paid a dividend.

The Russian-American Co. on the other hand started with a capital of three million roubles, in a small building now entirely devoted to vulcanizing. All their increase has been made out of their earnings, without an increase of capital. The par value of the stock is one thousand roubles, but the last sale was made at ten thousand roubles. This is accounted for by the fact that their yearly dividends run from sixty to seventy per cent. They manufacture about everything in the rubber line excepting rubber thread. The employés number 4800, more or less. The daily output of rubber boots and shoes reaches about thirty thousand pair, of which but five pair are boots. When orders accumulate to such an extent as to call for twenty pair of boots in one day, their capacity in that line is strained to the utmost. This is due to the fact that the Russian does not wear rubber boots.

The quality of their goods is unsurpassed, the workmanship excellent and the varnish or finish unequalled. Strange as it may seem, the first requisite of a rubber shoe with a Russian is: it *must* have a gloss and it must retain it. To such an extent is this point carried that rubber shoes are varnished and revarnished and are kept looking as bright as a well-kept pair of patent leathers. Another point is that all shoes must be self-acting. They must go on and come off without aid of the hand. The American shoe is, to them, a monstrosity, and as far as I am concerned, the Russian shoe is an abomination. Their weight and size causes every one to scuffle along as though they were wearing heelless slippers. I am going on as though I had the whole of your valued publication at my disposal, and yet I have said but little of that which I intended to say. The peculiarities of the system pursued here are many and strange. The company seems to care for its employés in all ways. The wages paid are very low, in fact, ridiculously so and yet they pay much more than they need to. I am told that the supply of labor exceeds the demand so much that people are willing to work at any price, and my personal observation confirms that fact. But the wages paid are but a small factor in their system. On the grounds is a well-fitted day-nursery where the children of the operatives are well cared for and fed while their mothers are at work. Two physicians are in constant attendance at the works and a well equipped dispensary is

cared for by four apothecaries. During all hours of the day a string of employés can be seen awaiting their turn at the door of this department where all the ills to which human flesh is heir are attended to. When the case reaches a critical point the company transfers the patient to one of the hospitals in which they own beds. This care extends to all for the company owns beds in the children's, men's and women's hospitals and in the lying-in hospital as well. Here I may venture to mention a practise which I think is unique, in this country. The government wishing to stamp out, if possible, unmentionable diseases, goes at it in a very practical way. Once or twice a month a physician, appointed by the crown, puts in an appearance at the works, and every male employé has to come before him and undergo a critical examination. This company has the record of having lost but one employé during the two or three years that the cholera has been epidemic. In order to accomplish this remarkable result, they strenuously forbade the use of water as a beverage to their employés. (I do not think that they are in much danger of any other use of that precious liquid.) On each floor of the various buildings there are large cauldrons in which tea is constantly made, and this they can have, *ad libitum*, either hot or cold.

In case of sickness, or loss by fire or flood, the company gives the suffering ones such assistance as they may require; night after night I sat by the manager and saw him dispense this charity to numberless applicants. Many dining rooms are scattered about throughout the works, but as these are neither large or numerous enough to accommodate all the employés at one time, part of the rooms are shut down from twelve to one and the others from one to two. When the gong strikes every employé must vacate the room and it is locked up for the hour. I had an amusing experience in this connection the first day I was there. I was busily engaged adjusting one of my machines, when I heard a deep, rumbling voice at the other end of the room. Looking up I found that all the hands had disappeared, while far away, at the door, stood an old man, grey bearded, booted and befrocked, holding in his hand an immense bunch of keys. "The Russian St. Peter" I thought. I looked at him with curiosity and he at me with displeasure, he shouted and motioned in a very energetic way and finally coming up to me, very plainly made me understand that I must get out. Gesticulations were in vain and out I got. I dubbed him at once "Old Mephistopheles," but took good care thereafter to get out when the engines shut down.

On coming into the works every employé divests himself or herself of their outer clothing which is put into a case bearing a number. Upon leaving and before donning the outer clothing of each is searched. They thus try to keep them honest as well as healthy. But they go even beyond this. The Russian, I now refer to the laborer, is nothing if not religious. At each entrance gate is to be found a pretty shrine or chapel in which tapers and oil lights are constantly burning. In the dining rooms are also beautiful shrines before which the operatives cross themselves and utter prayers every time they pass, and so the company provides for their spiritual peace and contentment. An illustration of this fervent piety of the Russian was very touchingly shown me. My operative had not had very good success on the machine, and I had run over it carefully and seeing that everything was all right, tried to cheer him by tapping him on the shoulder and trying to make him understand that all was well. He placed himself in front of the machine in a reverent attitude and removed his cap; made three deep reverences, crossing himself each time, while his lips moved as if in silent prayer. Whatever the cause may have been, the results were good from this on.

The company has a fund, created and maintained by one per cent. of the net earnings, from which employés having worked for a certain number of years, or becoming unable to work during faithful service, are pensioned, and at death the family receive a certain amount. One or two peculiar facts. The shoes made all bear the Russian mark, but each and every case is also marked in English, just the same as our American goods, with the exception that the Russian eagle is added, not a word of Russian about it, nor anything excepting the eagle to indicate its origin. Two of the foremen are Americans by descent, but not by birth. The father of one of these, one of the pioneers, is living here, in a happy old age, pensioned by the company. In closing this rambling talk, Mr. Editor, I want to pay tribute to the many sterling qualities of the management of this company, but more especially must I refer to Mr. Boris Kempe, the manufacturing director, with whom I had most to do. To him do I owe an unpayable debt of gratitude for the kind attention shown me both in and out of the works. No efforts were spared to make me feel at home, every facility for investigation was given me, and my every want and desire cared for as soon as made known. He was untiring in his praises for the way in which he was received by American manufacturers during his visit among them at the time of the World's Columbian Exposition, and I trust I am not going beyond bounds when I ask our rubber men to remember that such a man exists and, that should he ever visit our shores again, they may extend to him that welcome which he extended to me, and which he would extend to any one or all of them were they to visit that beautiful plant on the shores of the Neva.

## NEW RUBBER-GORING MILL.

A LETTER to THE INDIA RUBBER WORLD from A. C. Woodward announces that he is about to engage in the manufacture of rubber goring at North Abington, Mass., in a new mill of which he will be proprietor. Mr. Woodward was formerly manager of the Brighton mills at Camden, N. J., and for five years past has been a member of the firm of Dean, Chase & Co., and manager of their goring factory at Rockland, Mass. From another source it is learned that Mr. Woodward, on taking leave of the Rockland mill, received a handsome testimonial from the appreciative employés. In the position of manager at that mill he will be succeeded by his brother, Arthur Woodward. The North Abington mill is to occupy a new two-story brick structure on Washington street, 62 × 52 feet in size, and it is expected that operations will be begun shortly.

# NEW GOODS AND SPECIALTIES.

THE Chesterfield is a handsome single-breasted, deep-buttoning, body-fitting oversack. It has four outside pockets, is fitted with the usual collar tab, and further has eyelet ventilation under the arms. It is cut in the style of the spring overcoat, and is far more dressy than the cape coat worn without the cape. As it has no cape it is fitted with a deeper collar and a longer lapel, and it is in every way a neater, closer fitting garment. The popular materials for the making up of this style of garment are fine serges, kerseys, meltons, vicunas and covert cloths. When blacks or blues are used a velvet collar is often added. Made of covert cloth with outside straps and cuffs finished as in the box coat the effect is very swell. Manufactured by the Boston Rubber Co., Boston, Mass.

## RUBBER SHOES FOR DOGS.

A FRIEND writing from Germany speaks of the fact that the dogs, particularly aged pets, are shod with rubber shoes. That this is not a fad peculiar to our German cousins is proved by the following extract from the Albany *Times*:

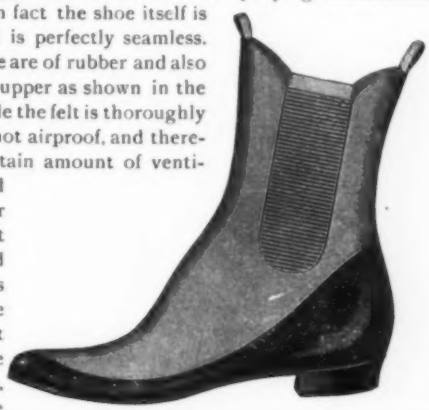
One of the latest products of civilization is rubber shoes for dogs, but unfortunately these canine rubbers are high-priced, and every dog needs two pairs. In cities where the street-car companies are allowed to strew salt to melt the snow, the briny slush makes the feet of dogs sore. The invention of dog shoes seems to be borrowed from the Arctic zone, where the toes of dogs that are used to pull sleds are protected by a sort of leather toe-piece fastened with thongs.

## THE ZIG ZAG STICHED BELTING.

THERE are on the market a great variety of rubber belts many of which are stitched belts. While some are stitched in one way and some in another,—the zig zag is perhaps the latest departure in stitching. As will be seen in the illustration the stitches instead of running in a straight line, zig zag the length of the belt from right to left. The particular advantage of this is that when the belt passes around the pulley these stitches have a certain amount of "give" far more than if they were straight. This kind of stitching is well known in the old fashioned art of darning stockings. One needs but to notice how the handy housewives cover the holes in the heels of stockings to see that the stitching is done in the same zig zag way, and the explanation is that the darned spot shapes better to the foot, is more elastic, and lasts longer. The Zig Zag Stitched Belting is made of the very best of materials and is manufactured by the Manhattan Rubber Mfg. Co., 64 Cortlandt street, New York.

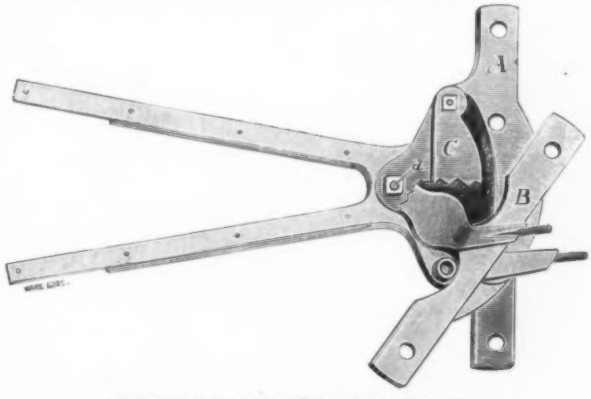
## THE SNOW DRIFT GAITER.

WHAT has been called the coming cold weather and storm shoe is the new type shown in the accompanying illustration. The upper and in fact the shoe itself is made of felt, and is perfectly seamless. The heel and sole are of rubber and also a portion of the upper as shown in the engraving. While the felt is thoroughly waterproof it is not airproof, and therefore admits a certain amount of ventilation. It is said to be excellent for keeping the feet both warm and dry, and it is claimed by the makers that it never causes the feet to perspire. The shoe is made entirely without stitches or pegs and fits the foot like a glove. The uppers are made of the best wool felt by a manufacturing house in Newburyport while the rubber part is furnished by the National India Rubber Co. Manufactured by The Rubber Felting Shoe Co., Lynn, Mass.



## A NEW USE OF RUBBER FOR CARRIAGES.

EMOND'S rubber-cushioned turn plate gear is a new fifth-wheel construction which serves as another illustration of the many parts which India-rubber has been made to play in carriage-building. The rubber may even be hidden from view, and its presence unsuspected, but it tends none the less to increased comfort and convenience for those who use carriages. In the illustration which gives a bottom view of the device, *A* is the head block bearing, with solid reach sockets; *B* is the

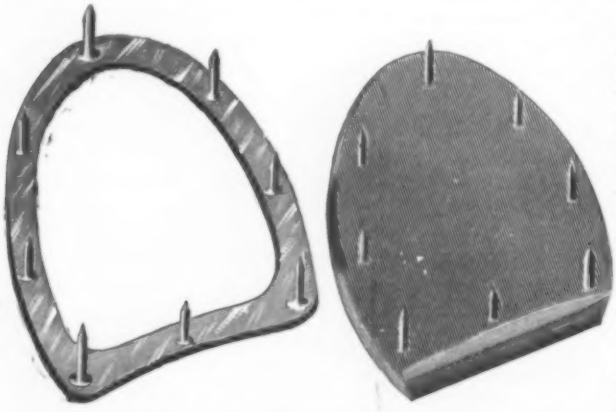



BOTTOM VIEW OF EMOND'S TURN PLATE GEAR.

axle bed bearing, extending to thimble turning center at *d*; *C* is the rubber-cushioned clamp plate, clamping gear together and locking nut at *d*. The rubber cushion is on top of and is the same shape of the safety plate *C*, and on top of the rubber there is a friction plate of thin steel for a wear surface. The rubber is $\frac{1}{16}$ inch in thickness, and, being placed between the two plates of steel and iron as a cushion, it prevents vibration, with the advantages of noiselessness and durability. The total result has been to make the "fifth wheel" a much less troublesome part of a vehicle, besides which an advantage is claimed on the score of economy. Manufactured by J. P. & W. H. Emond, No. 2115 Washington street, Boston.

## A NEW RUBBER HEEL LIFT.

THE three illustrations accompanying this show a new type of rubber heel lift, which has already been very widely sold. It had its first sale among policemen, letter carriers, street car and railroad men and restaurant waiters, but so many people come down hard on their heels that the general public are fast getting hold of the idea and having the lifts applied. The heel itself is made of a fine quality of rubber, which standard is to be kept up. The lift is fastened to the leather heel by pins, shown in the second engraving, and these are found to be



sufficient to hold it firmly in place without either cement or screws. The rubber is kept from tearing away from the pins by a metal frame also shown in the illustration which is embedded in the rubber and vulcanized therein. When the lift is fastened on the heel, this frame which passes around the edge clamps the rubber solid about the heel making a perfect joint. This lift has the further advantage that it can be successfully used by the shoe manufacturer as it can be applied byc machinery and requires no further fastening. It is said of this lift that it prevents jar to the nerves, it makes walking easy and noiseless, and on account of its elasticity it will not cut out over shoes or rubbers at the heel. It will not mar polished floors and will wear twice as long as a leather lift. Manufactured by D. A. McDonald, 136 Munroe street, Lynn, Mass.

## THE SIMPLICITY FOLDING MUD GUARD.

THE Simplicity is said to be, as its name indicates, the most simple of all mud guards. It is easy to apply, easy to remove and is never bulky or cumbersome. Indeed, the principal feature of it is that it can be almost instantly applied or taken off

of the wheel and when not in use can be folded and carried in the vest pocket. The guard can be attached to any diamond frame wheel and is very easily cleaned. The illustration shows the guard in position on a diamond frame and also folded for the vest pocket. Its size when folded is 6×2½ inches and the weight less than 6 ounces. Manufactured by the Hall-Shone Co., Rochester, N. Y.

## ANOTHER PNEUMATIC SHOE SOLE.

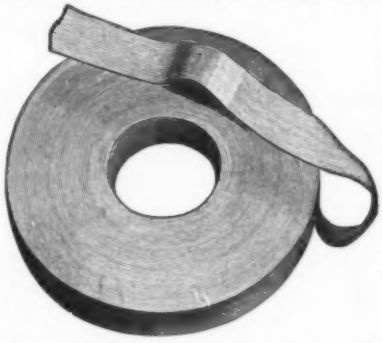
A PNEUMATIC shoe, the sole of which contains a cushion of air, has recently been patented. It is for the use of pedestrians and athletes, and is said to do away with plates and spikes that are now used to prevent slipping, and that are objected to because they tear up the tracks. A further advantage claimed is that the pneumatic sole provides so easy a cushion for the foot owing to the position of the air chamber that "burning" of the soles of the foot is entirely obviated. There are really two cushions, one under the sole and the other under the heel. At the instep is located a valve to which a small air pump may be easily attached for purposes of inflation. The shoe is the invention of A. W. Foster, Cape May City, N. J.

## PNEUMATIC SADDLE PADS.

THERE are various types of pneumatic saddles some of which have found warm friends. The latest novelty in this line is what is known as the Sager Pneumatic Saddle Pad, shown in the accompanying illustration. It is so simple that one can attach it to any bicycle saddle and the hardest and most unyielding is said to ride easier than the best spring saddle when thus fitted. The pads do away with both numbness and vibration when riding. Manufactured by the Sager Mfg. Co., Rochester, N. Y.

## THE SINEW ELECTRIC TAPE.

THIS brand of tape which is made in either black or white rubber has in a very short time become widely known. It is used not only in this country but large shipments have been made abroad. The particular points of excellence about it are that it has an exceedingly high insulation and that it never corrodes nor oxydizes when exposed to the elements. For use in factories for armature and other windings it has been found more than valuable. It is made from a specially prepared compound and contains no solvent to evaporate and leave a powdery residuum. Every roll is marked with the date of manufacture and is guaranteed to last six months. It is put up in ¼ and ½ lb. rolls, cut in widths to suit the trade. Manufactured by Spinney, Virtue & Co., Lynn, Mass.

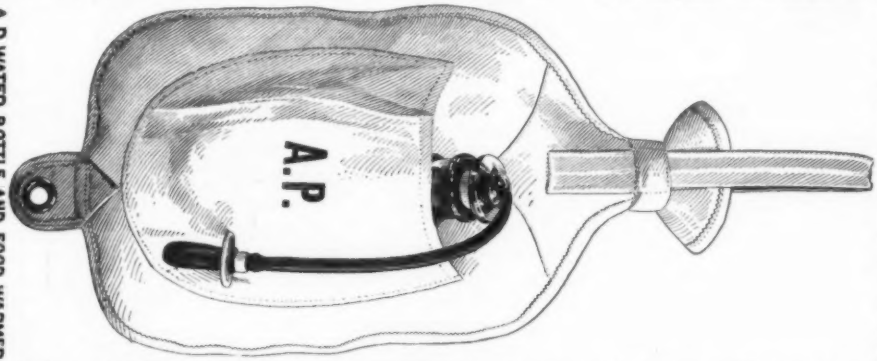


## BAILEY'S RUBBER TRUMPET.

A SOFT white rubber trumpet is the ideal toy for the following good and sufficient reasons. It cannot be dented or broken, there is no paint about it, to induce the infant owner to chew poison. The child can fall down on it, crowd it into his mouth or eyes without harm. The sounds produced by it are soft and melodious. By compressing the tube a number of variations in sound can be produced. It is cheap, practical and durable. Manufactured by C. J. Bailey, 22 Boylston street, Boston, Mass.

## THE A. P. HOT WATER BOTTLE.

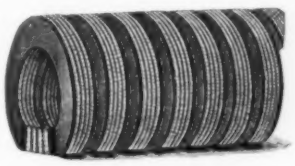
THE hot water bottle and food warmer here shown came within an A of having a set of initials to its name that are far from popular in certain circles. As far as we can learn, however, A. P., instead of denoting anything political or religious, stands for the name of the charming young woman who invented the bottle. As far as the bottle itself is concerned it needs but a brief description. It differs from the ordinary rubber foot warmer, only in having a pocket on the side, in which may be put a feeding bottle for an infant and the contents kept warm during the night. This is certainly a great convenience, and it is said that the bottle has had a most satisfactory sale. Manufactured by Morrison, Plummer & Co., 200 Randolph street, Chicago, Ills.




A.P. WATER BOTTLE AND FOOD WARMER

## THE IMPERIAL SPIRAL PISTON PACKING.

THIS packing is made in the form of a continuous ring, and is shaped to the rod and box, thus avoiding the trouble of bending to fit its place. Because of this when Imperial packing is ordered the exact space between the rod and stuffing box should be always given. Each box contains about twelve feet and is made in sizes from ⅛ inch up to 2 inches square. This form of packing is so well known that it requires no special description. The Imperial, however, bears the trade mark of the Boston Belting Co. as manufacturers, which is a guarantee of its quality.

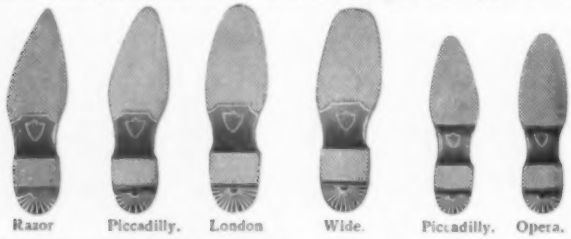


## A PNEUMATIC-TIRED SKATE.

IN attempting to produce a pneumatic skate the idea of the many inventors who have experimented in this field has not been merely to cater to the amusement of children, or to revive the skating-rink craze of a few years ago. The first of these inventions to reach the stage of manufacture on a commercial scale is called the "Skacycle," and a good idea of its appearance may be gained from the annexed drawing. It is the hope of those having it in charge to be able to begin supplying the trade by the end of the present month, and they have been encouraged in their plans by engagements which they have been able to make with a firm who have gained a great reputation in the introduction of sporting goods. The "Skacycle" is described by its inventor as a practical skate that can be used on any ordinary road, and at the speed of a horse or a bicycle. It is meant to facilitate travel afoot, to afford a healthful form of exercise for all the muscles in the body, and to involve an element of sport which will widen its use. While the cost is much greater than that of the ordinary roller-skate, it is less than that of the cheapest bicycle, which it challenges to competition. The only circular issued so far offers a single style of the "Skacycle," the price of which is $25. It embodies the advantages of pneumatic tires and ball-bearings, and is rendered attractive by nickeled parts. The proprietors are the Skacycle Mfg. Co., incorporated, Geo. E. Curtis, A. Kennedy Child, and Horace Pettit, directors, with offices at No. 3103 Ludlow street, Philadelphia.

## STYLES AND SHAPES OF TOES.

THE only difference of note that rubber shoes show this year is in the style of the toes. This following of the styles in the



Razor Piccadilly. London Wide. Piccadilly. Opera.

finer lines of leather footwear obtains through all lines of rubber footwear. The illustrations accompanying show four popular styles of toes in gentlemen's foot wear and four styles in ladies'. The illustrations are so good that there is really little to say beyond asking the attention of the reader to the shapes and names. Manufactured by American Rubber Co., Boston, Mass.

Regular. Common Sense.

## THE GIBBS CUSHIONED HORSE-SHOE.

THE advantages of the use of India rubber in horse-shoeing are becoming widely recognized, one indication of which is the success which has been met by H. H. Gibbs, of Indianapolis, Ind., the inventor of a new shoe illustrated on this page. By the use of shoes of this class the shock and jar to the horse from striking the feet against a hard stone or brick pavement are largely absorbed, so that not only the hoof, but the entire system of the animal is benefited. Further advantages to the horse claimed for the rubber-cushioned shoe are that, in winter, it lessens slipping and aids in keeping the feet dry, and, in summer, it keeps the hoof from becoming hot, since India-rubber is a non-conductor of heat. The particular shoe here illustrated is claimed to last so much longer than shoes made of iron or steel alone that, notwithstanding the greater first cost, its use will be cheaper in the end. The Gibbs shoe is made in two parts. The first is a drop hammer forging made by the Whitman & Barnes Co., of Akron, Ohio. The forging is taken to the B. F. Goodrich Rubber Co., also of Akron, who place it in a mold, from which it comes with both surfaces and the interstices filled with India-rubber. The construction of the shoe is such that as the rubber gradually wears off it is pushed farther down, thus keeping the cushion complete as long as it is in use. The inventor has organized at Indianapolis the Gibbs Cushioned Horse Shoe Co. to market his product, and is the president of the company.

## THE ARROW PNEUMATIC TIRE.

THE Arrow is a well known mechanical fastened tire and according to common report is simple, practical and durable, and in addition to this is being sold very largely. The manner of attachment is quite novel and yet the mechanical principle is both simple and perfect. The tire has pockets on its outer edges containing wire on either side that goes around the rim three times with its ends free. At two places on either edge, the wire is exposed and the point of exposure denoted by a very slight swell on the tire. To remove the tire from the rim after finding the two exposed places the swell is pushed in by the tire remover until the edges of the tire enlarge enough to be slipped over the rim. In replacing the tire is put upon the rim and the wires pulled as far as possible in opposite directions. This type of tire it is said fits almost any rim and when understood is very easy to handle. Manufactured by the Eastern Rubber Mfg. Co., Trenton, N. J.

## THE INVERNESS MACKINTOSH.

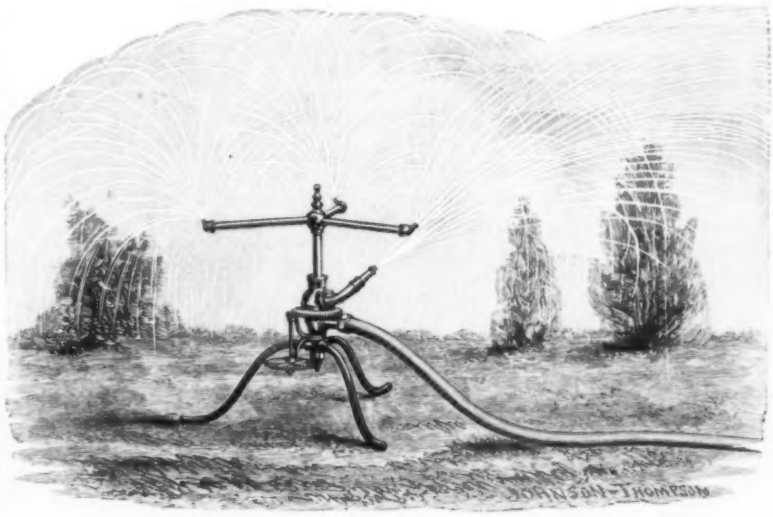
THIS is a sleeveless coat, and has two half arm capes for the protection of the arms instead of the usual single all-round capes. It is finished with both button and fly and the capes fall just below the wrist. It is also fitted with three pockets, two at the sides and a smaller one for tickets. This coat is used almost exclusively for evening wear, and therefore is always made up in solid colors. It is made of woolen fabrics more often even than from the fine cashmeres, serges and Henriettas, although these latter cloths make up very nicely. In cut and finish it is superior to the regular cloth coat and when made of a nice Kersey with handsome lining and deep velvet collar, it makes one of the most attractive gentlemen's garments on the market. Manufactured by the Boston Rubber Co., Boston, Mass.

## THE SUBMARINE BATHING CAP.

A LADIES bathing cap that really keeps the salt water from the hair is what is needed, and the inventor of that shown in the illustration has solved the problem exactly. The cap is made of a fine quality of cloth coated with pure Pará rubber. The cap is very pliable, strong, and a further recommendation is that it is very sightly. Almost all bathing headgear is ugly, this on the contrary is neat and *chic*. The band A is tight enough to keep out the water but as it is a rim ½ inch wide, of pure stock and very elastic, it is never uncomfortable. It hugs the scalp closely and allows no water to pass under it. The cap is eminently sensible, besides being fashionable. Manufactured by D. C. Hall & Co., 86 Leonard street. New York.

## THE "COMET" LAWN SPRINKLER.

THE "Comet" lawn sprinkler was named after the great comet of '61, for thereby hangs a tail and although recently discovered, will soon be visible on most of the lawns throughout the land. Unlike its great namesake, whose tail was always behind, the tail of the "Comet" sprinkler swings entirely round the circle. The globe or body is in two parts and by means of the swiftly revolving arms and intermediate gear, the upper half is made to revolve slowly round, carrying the hose nozzle from which a large stream of water is thrown out far beyond that thrown by the arms, thereby covering four times the space of any other stationary sprinkler. With an ordinary force of water it will cover a space 80 feet in diameter. The nozzle and tips on end of arms are adjustable, so it can be adapted to as small a space as desired. It is made entirely of brass (except the legs) and nicely nickeled, making the most durable as well as the most attractive and useful sprinkler ever made. J. B. Fellows & Co., 32 Oliver street, Boston, Mass., Patentees.



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JUST now, when everyone is talking of the first Napoleon, it is natural that those who love grace and beauty should turn to Josephine. Corcos' painting of that remarkable woman is what but a few favored ones have seen, a *fac simile* of it, however, is now put within the reach of all. This has been well called "a triumph of the lithographer's art." It is published by the B. F. Goodrich Co., Akron, Ohio, who will mail it post paid on receipt of one dollar.

## A FINE NEW STORE IN BOSTON.

THE removal of the Stoughton Rubber Co. (Boston) to their new store at No. 24 Summer street, on February 1, was mentioned in advance in our last issue. The store is centrally located on the busy corner of Summer and Hawley streets in the immediate vicinity of the great wholesale and retail centers of Boston and is readily recognized by its attractive entrance. The designing and arrangement of office and store furnishings have been tastefully carried out under the supervision of Messrs Driver & Dwight, architects.

The entrance is from Summer street. The store is 27′ wide by 140′ deep and of generous height. It is well lighted by numerous windows on Hawley street, and a unique arrangement of entrance and windows on Summer street. Near this entrance are all the conveniences for the proper disposition of goods, in order that they may at once be under the glance of the would be purchaser. Upon the left are large show-cases of double French plate glass, while to the right, upon the wall between the windows, are commodious garment cases. These are so arranged that during the day, when the garments are more or less in use, the cases are entirely open in front, but at night, or whenever desired, they may be closed by curtains of tasteful and harmonious color, thus protecting the garments during the necessary dusting of the store. Near the cases is a large bevelled French plate mirror for use in showing garments. Down the center of the store are two ranges of tables with drawers, specially constructed for carrying various stocks. Upon the left of the store, at each side of a handsome fireplace, are arranged two cases each 13′ high and 30′ long. These cases are divided into drawers and spaces to receive special goods. In the center of the floor between the case on the right of the fireplace and the offices, are cases for bicycle-tires and other special goods.

The office occupies a floor space of 12′ 6″ × 36′. The office screen is of a very pleasing and substantial nature, the panels in the upper portion being of bevelled French plate. Conveniently near to the office in the rear of the store is a sales office for the wholesale trade 13′ × 17′, well fitted with mirrors and conveniences for displaying samples. Here the walls are treated in light tone, the dado being finished ivory white, and the wall above in a delicate shade of sage green. In the rear of the sales office is the shipping-room, 27′ × 36′ 6″ into which the elevator from the street opens.

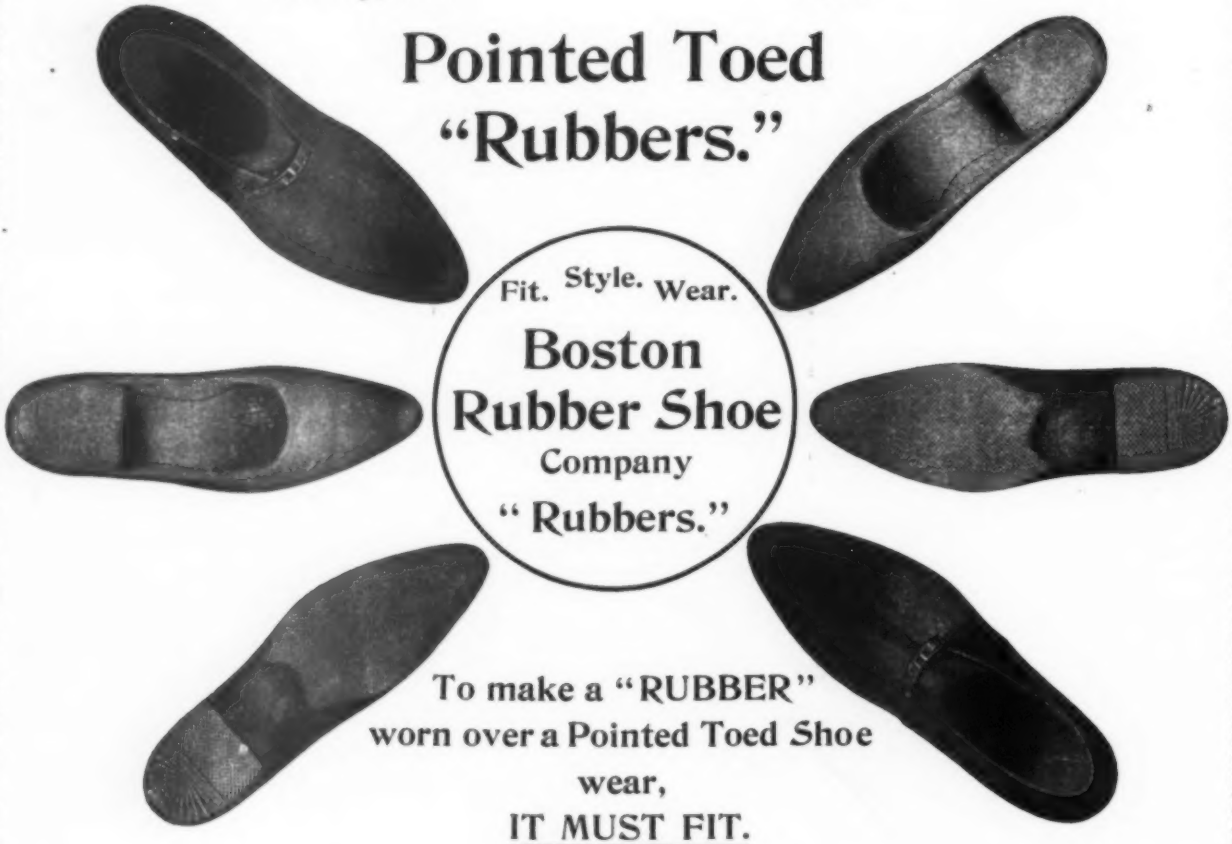
Electrically the store is well equipped with the overhead incandescent system, about 200 lights being used. All fixtures are of quartered oak finished light, with Bower-Barffed iron hardware. The elaborate decorations of walls and ceilings prepared for "The Moulton" have been retained, redecorated in part and so combined with the new fixtures and work that the entire store presents a harmonious whole.

# Everything said about Toes is Pointed.

When we say to you
That the style of
Leather Shoes
Is very Pointed,
You say, Yes!

But do you know
That the wear of a
RUBBER Shoe
Depends upon the
FIT?

## Pointed Toed "Rubbers."



Fit. Style. Wear.
**Boston Rubber Shoe Company**
"Rubbers."

To make a "RUBBER"
worn over a Pointed Toed Shoe
wear,
IT MUST FIT.
Hence,

## Boston Rubber Shoe Company's POINTED TOED "RUBBERS."

ALL STYLES.

# WHY A PNEUMATIC TIRE IS FAST.

*By Sterling Elliott.**

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THE shortest and most comprehensive answer to the question why a pneumatic tire is "fast" would be to say that it *isn't*, except in a relative sense. The success of the pneumatic tire of to-day is due to poor roads, for if the roads were perfect the air-tire would be among the very slowest.

Presumably that tire is "fastest" which rolls along its path with the least resistance. The pneumatic tire seems to be faster than others simply because the track over which it runs is rough. On a smooth track, or one which is as smooth as the surface of a railroad rail, the pneumatic tires require nearly double the propelling force that is needed to haul a similar load on wheels having rigid metallic tires. The reason for this is that the motive power required to haul vehicles over any road surface is mostly used up, not in overcoming axle friction or what is strictly road friction, but in constantly *lifting* the load over minute obstructions.

FIG. 1.
[Steel Tire, Lifted When Meeting an Obstruction.]

Given a perfectly smooth, hard surface and a perfectly round and non-elastic wheel, and road friction becomes but a small part of the resistance to be overcome. This is well demonstrated by the fact that the lowest cost per ton per mile for hauling freight overland with wagons and horses is about 25 cents while a railroad can do the same work many times quicker and at a cost of but half of 1 cent per ton per mile. Much of this difference is popularly supposed to be due to the greater economy of steam-power over power exerted by horses, but I feel justified in assuming that the difference is almost wholly due to the reduced friction between the wheels and the road.

According to latest report of the Massachusetts railroad commissioners, showing the relative cost of equipping and operating street railways, it is found that the net results favor horse-power. Of course there are many reasons why the "trolley-car" is preferable, and why it deserves the great popularity which it has already attained. But the fact remains that, when all items are taken into account, a given load may be hauled a given number of miles on steel rails at a less cost when horse-power is used than if drawn by steam.

As I have stated, if roads were smooth the pneumatic tire would be a positive disadvantage. But since roads,—*i. e.*, earth and stone roads,—are not smooth, and as it is not probable that they ever will be, the pneumatic tire is fast as compared with others, simply because it obviates the necessity for raising the entire load over the little obstructions, by allowing its surface to be indented by them, and so, in a certain sense, "smoothing" the road.

The elastic tire of whatever kind rests upon the ground in a flattened position (see Figure 3) which means that the material composing it is distorted from its normal shape. To accomplish this distortion force is required. To haul an elastic-tired wheel along a perfectly smooth surface requires as much force as would be needed to haul a rigid wheel, plus whatever is required to distort the elastic surface, which would amount to about 100 per cent. of added and unnecessary resistance. This resistance is always present and is always acting *as a resistance.*

The surface of the best road is made up of innumerable points and obstructions, and it is over these little obstacles that the pneumatic tire shows enough advantage to outweigh its inherent resistance, and leave upon the other side a balance in its favor amounting, on a gravel road, to approximately 50 per cent.

The difference between the force required to lift a given body, or to move it forward on rollers, needs no emphasis to those who have tried it, and here comes in the practical effect of the elastic tread. Figure 1 shows a rigid wheel rolling over a small stone; the entire weight of the load must be lifted, while with the elastic tire, as in Figure 2, the tire is indented and the load lifted but slightly.

On a so-called smooth road stones of this size would not often be encountered, and in the case of the smaller obstructions which do exist the yielding nature of the tire will receive them without lifting the load perceptibly. Hence the force of the team is exerted, not in constantly raising the vehicle over obstructions, but in hauling it forward against the much less resistance due to the compressing of the rubber and air. The hard tire goes over the tops of all obstructions, while the elastic tire goes over an *average* surface which is below the high points, the effect of which is equal to a very material leveling of the road.

FIG. 2.
[Rubber Tire Meeting Obstruction; Side Lifted, Showing Stone.]

* The writer of this paper has contributed largely to the development of the pneumatic tire and was first to apply it to sulky-wheels as a result of which trotting records have been so much lower. He is now editor of *Good Roads*.—The Editor.

At a slow speed the difference between the pneumatic tire and a tire consisting of solid rubber is comparatively small, but as the speed increases the superiority of the pneumatic becomes more apparent for reasons which will here be given.

Assume that the wheel (see Figure 3) is rolling in the direction of the arrow. At the point *A* a constant compression of the tire takes place, as all parts of the tire on reaching that point must at once be flattened by contact with the road. If there were no compensation for this, any elastic tire would run exceedingly hard, but the compressed rubber, air, or whatever constitutes the elastic portion, has an inherent tendency to react, and this tendency corresponds exactly to the force required to compress it.

Hence at the point *B* we have a force acting to push the wheel forward, which force is the same in amount and exactly balances the resistance at *A* so long as the wheel remains at rest. But on moving the wheel, a resistance is met which is equal to the force needed to indent, bend, or change the shape of the rubber in a new place, and this resistance amounts, as stated above, to fully double that met in rolling a rigid-faced wheel over a really smooth surface.

Many attempts have been made to devise a tire which should combine, with the advantages of the pneumatic tire, a greater degree of durability and immunity from what was at first the greatest bugbear, viz.: the danger of puncture; but in nearly all such experiments the real excuse for the existence of the pneumatic tire has been overlooked.

FIG. 3.
[View of Rubber Tire Hiding Stone as it Passes Over.]

If ease of draft—which is another name for speed—is looked for, then the principal requirement in an elastic tire is that it shall be elastic *on its surface*, so that pebbles may become imbedded at any point, while allowing the surrounding material of which the tire is composed to bear on the *average* of the road surface instead of its highest points. This much may be had in a rubber tire which is *not* pneumatic in construction.

But the solid rubber tire is not to be compared with the pneumatic when speed is desired, for the following reason: The compression of the rubber at *A* is forced by the power applied to haul or drive the tire; the reaction at *B* is simply the natural tendency of the compressed rubber to regain its normal shape, and this action requires a certain interval of time.

If you were to press your thumb into freshly-risen bread-dough and then quickly remove it, the indentation would remain long enough to permit you to see the swelling back into shape of the dough. Now, if a tire were made of a material which had this sluggish sort of elasticity it would run extremely hard, even at slow speed, because the compression at the point *A* would occur so rapidly that the reaction could not occur promptly at *B* but would take place *after* the compressed part had left the ground. Thus it would not act to push the wheel forward, but would have the constant resistance at *A* with nothing to offset it.

Exactly this reasoning applies to the solid rubber tire. So long as it is hauled at a speed which is slower than the expansive action at *B*, that action will count toward overcoming the resistance in front, but as soon as that speed is exceeded the tire loses much of its value.

To sum up the reasons why a pneumatic tire is fast—

First, it is faster than a rigid tire because of the unevenness of the road, as already explained.

Second, it is faster than other forms of elastic tires because the elasticity of compressed air acts *more quickly* than does that of the more solid materials.

If the reader has the patience to deal with statistics, a few figures can be used to illustrate, in a striking manner, the point already made, that the pneumatic tire is of the greatest advantage on the roughest roads. These figures have been used more than once before,* but they are of none the less value for that. In experiments designed to ascertain the relative tractional power required to draw wheels with tires of different types over smooth and over rough roads, a brougham weighing some 1700 pounds was used, with the following results:

| | Iron tires require— | Pneumatic tires require— |
|---|---|---|
| Over smooth macadam.. | 40 lbs. | 23 lbs. |
| Over paved streets..... | 48 lbs. | 26 lbs. |
| Over fresh-laid macadam | 130 lbs. | 37 lbs. |

While these figures have been quoted hitherto to show that, aided by pneumatic tires, one horse can practically do the work of two without such tires, they may also be used to indicate how much greater speed may be made with pneumatic tires than without them, by the use of a given amount of tractive power.

As between the various forms of pneumatic tires, that construction would be fastest which confines the air with the least resistance to lateral pressure. For instance, a pneumatic tire could be made with walls so thick and firm that, while it would be comparatively safe against puncture, the real pneumatic elements would be practically lost. The other extreme, the *fastest* possible tire, would be one which confined the air in the thinnest and softest possible envelope, but such a tire would be in constant danger of puncture.

Many experiments have been made with a view to the discovery of a material which would combine the two desirable elements of speed and safety. Future experiments may bring to light a material from which such a tire can be produced, but the best that has been done so far is a compromise in which the question of every-day practical utility is most considered.

* For instance, by Mr. Arthur Du Cros, in a paper read before the meeting of the Institute of British Carriage Manufacturers, at Birmingham, on "The Adaptation of Pneumatic Tires to General Road Conveyances." S. E.

## INDIA-RUBBER CASES IN COURT.

AN interesting trial that had lasted two days was concluded on January 17, in the United States circuit court at New York, before Judge Shipman and a jury. The case was brought by the Mercer Rubber Co. against the New York Commercial Co. upon two contracts dated August 2, 1892, for the sale of 70,000 pounds of India-rubber, to be delivered to the plaintiff in September, October, and November, 1892. One contract was for 60,000 pounds of upriver coarse Pará, at 47 cents, and the other for 10,000 of negroheads (Islands coarse Pará) at 43 cents. The transactions were made through De Long, Betts & Co., brokers. The complaint set forth that the deliveries made during the months named aggregated only 32,057 pounds, though plaintiffs were ready and willing to receive and pay for the whole amount, and that in consequence of failing to receive all the rubber contracted for they were obliged to go into the open market and buy rubber at higher prices than were involved in the contracts, whereby they suffered a loss of $3 523.86. The suit was for the recovery of this sum, with interest from April 8, 1893, and costs. The defendant corporation admitted the failure to deliver the rubber, but claimed that it was liable only for the difference between the contract price and the prices prevailing in September, October, and November, 1892, without reference to what prices may have been later. This difference amounted to $1580, and the jury gave a verdict for this amount, thus sustaining the position of the defendants. William M. Ivins was the plaintiffs' attorney, and Myers & Anable appeared for the defendants.

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A POINT of more than usual interest is involved in the decision reached in the case of Gustav Amsinck & Co. (New York) *v.* John C. Balderston, in the United States circuit court at Providence, R. I., on January 8. The plaintiffs sued to recover $30,000 on promissory notes of the old National Rubber Co., issued in 1887, at which time Mr. Balderston was one of the directors. It was the contention of the plaintiffs that at the time the notes were issued the debts of the defendant company exceeded the amount of its paid up capital stock, and that in issuing the company's notes under such conditions the directors became personally responsible therefor. The argument of this question of the liability of the directors was protracted through several years. Judge Carpenter decided the case in favor of the defendant.

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THE Goodyear India-Rubber Glove Manufacturing Co. in May, 1891, filed suit in the United States courts against Franklin Hubbard, of Toledo, Ohio, doing business as F. Hubbard & Co., to recover $42,822.25 and interest, alleged to be due for goods sold and delivered to the latter. The defense was that Hubbard received the goods as an agent, and in a cross bill he sought damages in the sum of $27,000 alleged to have been sustained by reason of the disregarding, by the plaintiff, of certain agreements as to prices to be charged other dealers. The special commissioner to whom the matter was referred filed his report on January 23, finding that the rubber company are entitled to $22,800.25, and Mr. Hubbard is allowed on his cross bill $9418.64, leaving a balance of $13,382.61 in favor of the rubber company.

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THE North British Rubber Co. brought suit lately against the Gormully & Jeffery Manufacturing Co. for infringement—at their branch factory at Coventry, England—of the Bartlett "Clincher" tire patent, the validity of which was determined in the action last summer of the North British company against Charles Macintosh & Co., Limited. The plaintiffs prayed for an injunction. Counsel for the defense stated that his clients had been making these tires at Coventry for two years, with the full knowledge of the North British company, who now for the first time, when the business had gotten a good start, opposed a claim of infringement. The Gormully & Jeffery company had offered to pay a royalty on all the tires made by them at Coventry, but this offer had been disregarded in the bringing of this suit. They were prepared, said the counsel, to deny that there was any infringement, and to test the validity of Bartlett's patent. Justice Chitty decided that the defendants should pay $2500 into court and keep an account of the tires manufactured by them until the trial of the case, which was set down for six months from date It came out that from July to the end of 1892 the Gormully & Jeffery company made at Coventry 53 tires; during 1893 they made 1075; and in 1894, up to the date of the affidavits submitted, 2255 had been made.

## MR. BANIGAN'S GIFT TO A UNIVERSITY.

ON Tuesday afternoon, January 15, at Providence, R. I., the formal dedication occurred of the St. Marie Home, a present to the working girls of that city from Mr. and Mrs. Joseph Banigan. The cost is understood to have been about $50,000. The exercises were witnessed by a large audience, including business men and dignitaries of the church, among them Bishop Keane, who is the head of the new Catholic University of America, at Washington. At the dinner which followed, Mr. Banigan handed to Bishop Keane a sealed envelope containing his check for $50,000, for the establishment of a chair of political economy in the proposed School of Social Science in the university. A writer in the Providence *Journal* states that while the Roman Catholic church in New York has always been interested in building up strong educational institutions in that archdiocese, no New Yorker has yet made such a gift to a Catholic school as that of Mr. Banigan. It is said that this gift was in fulfilment of a promise previously made to Cardinal Gibbons.

## SOME FINE LADIES' MACKINTOSHES.

EARLY in April the Madison Square Garden is to be the scene of an exhibition more novel than anything in the way of horses, bicycles, poultry, or chrysanthemums—all of which have been successful in attracting great crowds to that beautiful building. It is to be styled the International Exhibition of Costumes, and is to be held under the auspices of an organization of ladies in New York city. There are already so many indications that the exhibition will be interesting and attractive that it is safe to predict that even Madison Square Garden will not be large enough to hold all the women of this and neighboring cities who will want to see it. The great improvement which has been made in late years in ladies' mackintoshes will enable manufacturers of garments in this line to compete in the coming exhibition with the assurance that their goods will take front rank among wraps in the point of attractiveness. It is understood that the Hodgman Rubber Co., who will be represented at this exhibition, are having made for it some ladies' mackintoshes which are intended to be the finest and handsomest ever produced.

## THE TRADING IN RUBBER STOCKS.

A SEMI-ANNUAL dividend of 2½ per cent. on the common stock of the United States Rubber Co. was declared at the monthly meeting of the board of directors held in New York on Wednesday, February 6.

The transactions in the shares of this company on the New York Stock Exchange for each day of the past month were as follows:

LISTED ON THE NEW YORK STOCK EXCHANGE.

201,660 shares Common = $20,166,000.
194,005 shares Preferred = $19,400,500.

| DATES. | COMMON. | | | PREFERRED. | | |
|---|---|---|---|---|---|---|
| | Shares | High. | Low. | Shares. | High. | Low. |
| January 2 | 1,570 | 45 | 44 | 274 | 94¼ | 94 |
| January 3 | 870 | 43¾ | 43½ | 200 | 94 | 93¼ |
| January 4 | 1,850 | 43¾ | 43½ | 100 | 94 | 94 |
| January 5 | 250 | 44¾ | 44⅝ | 50 | 93½ | 93½ |
| January 7 | 520 | 44 | 44 | 15 | 93¾ | 93¾ |
| January 8 | 600 | 44⅞ | 44½ | ..... | ..... | ..... |
| January 9 | 1,300 | 45 | 44⅞ | 111 | 94½ | 94½ |
| January 10 | 110 | 44½ | 44½ | 180 | 94½ | 94½ |
| January 11 | 200 | 44¾ | 44⅝ | 300 | 94½ | 94½ |
| January 12 | 203 | 44¾ | 44⅜ | ..... | ..... | ..... |
| January 14 | 520 | 44¾ | 44½ | .... | ..... | ..... |
| January 15 | ..... | ..... | ..... | 140 | 94½ | 94½ |
| January 16 | 100 | 44½ | 44½ | 200 | 94⅜ | 94⅛ |
| January 17 | 200 | 44½ | 43⅞ | 10 | 94⅜ | 94⅜ |
| January 18 | 160 | 44¾ | 44¾ | ... | ..... | ..... |
| January 19 | 501 | 44 | 43½ | ..... | ..... | ..... |
| January 21 | 254 | 43½ | 43⅜ | 17 | 94½ | 94½ |
| January 22 | 1,051 | 43⅜ | 43 | ..... | ..... | ..... |
| January 23 | ..... | ..... | ..... | 135 | 94⅛ | 94⅛ |
| January 24 | 150 | 42¾ | 42¾ | 200 | 94 | 94 |
| January 25 | 435 | 42 | 41⅛ | 160 | 93¾ | 93¼ |
| January 26 | 200 | 42⅛ | 42 | ..... | ..... | ..... |
| January 28 | 135 | 41⅝ | 41½ | 25 | 92½ | 92½ |
| January 29 | 860 | 40½ | 39¾ | 10 | 93¾ | 93¾ |
| January 30 | 807 | 40⅞ | 39¾ | 25 | 91 | 91 |
| January 31 | 550 | 41¼ | 41 | ..... | ..... | ..... |
| For the month | 13,296 | 45 | 39¾ | 2,152 | 94⅝ | 91 |
| Month preceding | 24,561 | 45 | 40¼ | 2,144 | 99¼ | 97 |
| January, 1894 | 4,083 | 40½ | 36¼ | 1,447 | 85 | 79¾ |

## TRADE PUBLICATIONS.

THE new catalogue of the Norfolk Rubber Co. (Boston), shows some attractive late styles in mackintoshes and, ilke its predecessors, gives instructions for measurements for the use of the customers' patrons who send their orders by mail.

—The Alpha Rubber Co., Limited (Montreal), send us a circular illustrating and describing their new lines of druggists' goods, in naming which they have drawn upon the Greek alphabet. They make "Beta," "Gamma," and "Delta" new atomizers, "Alpha" and "Omega" syringes, and "Alpha" and "Omega" water-bottles.

—Two points noticeable in a pamphlet describing the "Flexifort" bicycle-tire, manufactured by the Mechanical Fabric Co. (Providence, R. I.), are that their guarantee is more carefully defined than has been usual in such cases—narrowing the possibility of its abuse—and that they solicit a mail business, their tires weighing so little that postage is cheaper than express charges. The pamphlet gives in detail the points of excellence claimed for this new tire.

—In his Catalogue of India-Rubber Goods for Mechanical Purposes, C. S. Knowles (Boston) lists a wide variety, including belting, packing, hose, tubing, springs, mats, rollers, and step-treads. A specialty in the leading lines is the "Samson" brands. Prices of all the goods described are embraced in the pamphlet.

—"A Storm Signal" is the title of a neat 8-page folder devoted to the gospel of prevention. It is simply an artistic booklet on the influences of mackintoshes, and calling fresh attention to those bearing the name Hodgman. It warns the reader against getting wet, and incidentally against buying mackintoshes made in Europe that will not bear transplanting to America, as our climate causes them to decompose and fall apart. Published by the Hodgman Rubber Co., New York.

—"Tall Oaks From Little Acorns Grow," is the quotation that introduces a card folder exploiting the "Acorn brand" of table, stair and shelf oilcloth made by the Akron Oilcloth Works. The frontispiece shows an oak tree covered with acorns as big as pumpkins. The second and third pages are taken up with pithy proverbs, while on the last page the advertising man standing on the top round of a long ladder is painting the name of his company on the face of the moon. Published by the Western Linoleum Co., Akron, Ohio.

—The Lake Shore Rubber Co., Erie, Pa., issue a neat 24-page booklet describing goods of their manufacture. It covers belting, packing, hose, and general mechanical rubber goods. The publishers also call attention to a special list giving the names of their own brands of hose and belting.

—The North British Rubber Co., Limited (Edinburgh), are extensively engaged in manufacturing the "clincher" tires and rims for bicycles, and they send an interesting catalogue of the same. Unlike American catalogues, this pamphlet is composed mainly of commendatory descriptive notices of their tires from the bicycling and sporting press. A series of pictures is given, showing the development of their tires from the first of their products in this line.

## OBITUARY.

IRA M. CONANT died January 17 at his winter home in Boston, whither he had lately come from his residence in Bridgewater apparently in the best of health. He was born January 3, 1827, at Wareham, Mass., and educated at the Bridgewater Academy, engaging in business at an early age at Bridgewater and Newton, and later at Attleboro, Mass. In 1866 Mr. Conant removed to Bridgewater and transferred his business interests to Boston, where he organized the firm of Conant Brothers, in which his brother William H. was the junior member. He was afterward the founder of the Gossamer Rubber Clothing Co., the pioneer house in the manufacture of its specialty. Mr. Conant was a man of fine business ability, and was much interested in the welfare of Bridgewater, though never an active participant in public affairs. He leaves a widow and three sons—George M. and Herbert I. Conant, of the Conant Rubber Co. (Boston), and Dr. William M. Conant, also of Boston.

* * *

GEORGE DUNBAR died January 6 in his seventy-second year and was buried in his native town—Sharon, Mass. In early life he became connected with the firm of Bird & Weld, manufacturers of India-rubber machinery at Trenton, N. J., and took charge of a rubber factory which they established at Charleston, S. C., before the war. Later he established a store in Chicago for the sale of railway supplies. Returning to the East he established in connection with his brother Hiram Dunbar (who survives him) the Boston Rubber Car-Spring Co., with a factory at Roxbury. He had not been actively engaged in business for a good many years.

* * *

THE wife of Francis H. Holton, superintendent of the specialties department of the B. F. Goodrich Co., at Akron, Ohio, died on January 10, and was buried at Brooklyn, N. Y.

## HEARD AND SEEN IN THE TRADE.

THE size of the dividends declared so far by the United States Rubber Co. would indicate that this terrible monopoly has not robbed the people quite as much as the "anti-trust" newspapers predicted. A rubber-shoe jobber talking on this point said: "Although this combination has had full control of the market, has kept its factories busy, has advanced the prices of its products, and has introduced important economies in management, yet it has only been able to pay 8 per cent. upon its preferred stock (about half its capitalization), and now, after two years, the first small dividend on the common. These dividends represent profits of only about $2,000,000 a year from the business of ten large manufacturing concerns. It is easy to see now that some of the companies, before the consolidation, not only were earning no profits, but such dividends as they declared were paid from surplus funds. They had gotten into this condition through reckless competition in cutting prices, and the advance of which so much has been heard has only put prices back where they ought to be—high enough to pay an honest profit on the manufacture of goods."

* * *

ONE of the shoe-trade journals lately printed complaints from several dealers that they were no longer able to sell a woman's rubber for 25 cents, and I mentioned this to the jobber. "There are no more such shoes in the market," said he. "I used to handle thousands of cases of these goods, which the retailers bought at 18 cents and sold for 25, but they were a disgrace to the trade. No more of them are made. The cheapest shoes in that line now are listed at 35 cents, with 20 per cent. off to the dealer, who thus pays 28 cents. If the retailers do pay more for rubbers than formerly, they are getting better goods for their money." The same thing was said to me later by the president of one of the oldest companies in the business. He added that in every line of rubber-manufacture great damage could be done by the introduction into the market of even a small output of inferior goods; the public isn't able to judge of rubber by its appearance, and there are many persons who, if the first article of rubber they buy is a failure, look with distrust upon all other goods in the same line.

* * *

IT seems that it is the retailer, after all, who fixes the prices of rubbers. The manufacturers every year get out their price-lists (retail), with discounts to dealers. But the consumer never sees these prices; he doesn't even know that they exist. To get back to my jobbing friend, I learned from him that no rubbers in the trade are listed as high as I have habitually paid in a certain shoe-store on Broadway. "You might have crossed the street," he said, "and bought the same shoes at a ready-made-clothing store for 25 cents less. Farther up town, where competition in the shoe trade is livelier, they would have cost you less still. The fact is that retailers sell rubbers for what they can get, and no doubt many of them were glad to see the advance made by the manufacturers, as an excuse for putting up their own prices to a more marked extent. But there is no evidence that the new prices have interfered with the sale of rubbers."

* * *

IT appears to be the opinion of the trade that rubber overshoes, which have been on the market for half a century, have become a staple article, with defined limits of demand, and that there is now no new territory to be conquered by the festive salesman with rubbers. The southern states never will buy rubbers more liberally, because they don't need them, while every inhabitable northern country has been supplied already. The only legitimate growth in the demand will proceed from the increase in population. But with mackintoshes it is different. There is still room for development in their sale, both in their introduction into new districts and in an increased demand everywhere on account of the recent greatly improved appearance of these garments. Many people, by the way, appear to be buying mackintoshes in lieu of overcoats.

* * *

THE New York cycle show, big as it was, did not represent the whole rubber tire production of the country. Among the concerns not exhibiting was the Overman Wheel Co. (Chicopee Falls, Mass.), who failed to secure certain desired special privileges, I believe. They manufacture the well-known "Victor" bicycle, and also the "Victor" tire, which consists of a tubular casing cemented to the wheel-rim and containing an inner air-tube removable through a hole in the rim. This year they have added a single-tube tire, supplied on wood rims, being 1⅝ inches in diameter and weighing 1¼ pounds. The Overman Wheel Co. have lately devoted a part of their immense plant to the manufacture of sporting goods generally, including several articles of which India-rubber forms a part—such as footballs, baseballs, and tennis-balls. Their New York representative tells me that they expect to add golf-balls.

* * *

ALREADY there are people in the rubber trade who think that the tire business is in danger of being overdone. There are probably twenty-five concerns ready to supply bicycle-tires, and the total estimated demand for 1895 would average only about 20,000 pairs for each concern. As they cannot keep a close watch upon each other, it is easy to see how a heavy overproduction might result, with a fatal effect upon profits in a business where prices have to be figured so closely. I hear it predicted, by the way, that the cream of the trade will yet be in the hands of the leading bicycle-manufacturers. The success of Colonel Pope and the Overman people in this direction has turned the attention of other companies to the subject of becoming their own tire makers.

* * *

"THE trade is becoming a continual succession of crazes," said a rubber-man who brought out a box of beautiful golf-balls to show me. "These I believe to be as good balls as the world ever saw, and we can make them of prime Gutta-percha and put them on the market as cheaply as the English article would sell here without the duty, but we don't propose to go any farther in the matter. Here are people in the sporting-goods line asserting that millions of golf-balls a year will soon be needed in the United States, and although these figures are perfectly absurd, I expect to see a lot of rubber-men rush into the field with twenty times as many balls as are needed—good, bad, and indifferent—with the result that prices will be cut until there are no profits for anybody concerned. They are already overdoing the tire business, although that has tremendous proportions compared to golf-balls. The fact is that factory capacity in America in every line is so great that there is danger of overproduction—and consequent failure to make money in the end—in almost everything one undertakes. That is why, when we do get a good thing, we sometimes find it wise to introduce it quietly.

THE MAN ABOUT TOWN.

## TRADE AND PERSONAL NOTES.

THE annual meeting of the stockholders of the Mechanical Rubber Co. will be held in Passaic, N. J., at the office of Thomas M. Moore, on Wednesday, February 13, at 12 o'clock, noon, for the purpose of electing directors for the ensuing year and the transaction of such other business as may properly come before the meeting. Transfer books were closed at the office of August Belmont & Co. on February 8, to be reopened on the day following the meeting.

—The Boston Rubber Shoe Co. are carrying a full line of their goods in the Chicago store—Nos. 207-209 Jackson street—occupied by the late firm of George P. Holmes & Co. Their Chicago agent is Albert F. Solbery, who was associated with Mr. Holmes for eighteen years.

—The Wales-Goodyear Rubber Shoe Co.'s agency in Chicago, at Nos. 240-242 Monroe street, is succeeded by the new jobbing firm of A. D. Wentz & Co. Mr. Wentz was formerly agent for the Wales Goodyear goods and will continue to handle them. Still earlier he spent sixteen years with George P. Holmes & Co.

—Mr. William A. DeLong, of the New York Commercial Co., who has crossed the Atlantic so often that he has lost count, paid a visit to the company's London offices last month, returning on the *Paris*, which arrived at New York, after a good voyage, on February 2.

—The Pacific Rubber Co., have moved their New York offices from the Rothschild Building to the new and elegant Cable Building at 621 Broadway. They have there a show room, an office, and a private sanctum for out of town trade. The offices are finished in quartered oak, lighted by electricity, and fitted with the latest conveniences. They are on the Broadway front and are in every way exceedingly attractive.

—The Hodgman Rubber Co. are having an edition of their catalogue printed in the Spanish language for distribution in Mexico, Central America, and South America. The time is not considered ripe for employing salesmen for those countries; so far such goods as rubber clothing, when they are ordered from the United States, are bought here by commission merchants as directed by their foreign correspondents. The judicious distribution of an attractive catalogue in Spanish can hardly fail to result in Hodgman goods being specified in a good share of the orders for rubber garments from the far south in due time.

—Mr. Charles Davol, of the Davol Rubber Co., Providence, R. I., sailed on the 30th of January for Europe. He will be absent four months and will take the journey up the Nile that has become so popular a winter trip of late.

—At the annual meeting of the stockholders of the Chicago Rubber Clothing Co. at Racine, Wis., on January 22, the old board of directors was reëlected, as follows: Joseph Miller, C. H. Lee, J. Walrath, L. J. Elliott, H. J. Miller, and Emma V. Laughton. At a meeting of the directors Joseph Miller was elected president and Emma V. Laughton secretary-treasurer. H. J. Miller, a director, who since the death of Mr. Laughton has been acting as superintendent and partial manager, resigned, owing to ill health, and his successor has not yet been appointed. A dividend of 6 per cent. was declared.

—C. J. Bailey & Co., of Boston, have offered rewards to their clerks for catching any of the thieves who have been giving the house trouble. Two salesmen received $5 each under this offer for catching a man whom they saw take a valuable mackintosh from outside the front door the other day.

—The Messrs. Deardorff, while establishing an extensive new rubber-goods store at Indianapolis, will not abate the enterprise with which they have conducted the Toledo Rubber Co. up to date. They advise THE INDIA RUBBER WORLD that they have increased the working force of the store at Toledo and that they "expect to push out to the trade from both points, stronger than ever."

—The organization has been completed of the Dominion Rubber Reclaiming Co., of Montreal, whose incorporation was reported lately in this paper. The directors elected are W. Clendinneng, F. Dagenais, William Currie, W. F. Lighthall, and William Currie, Jr. They have chosen W. Clendinneng for president, William Currie for vice-president, J. H. Ross for secretary-treasurer, and W. McDiarmid for mechanical superintendent.

—The Riverside Rubber Works (Belleville, N. J.) have installed a new vulcanizer the capacity of which, in an eight-hour run, is estimated to be equal to that of a fifteen-hour run with their former equipment.

—C. H. Ellert, proprietor of the Evansville (Ind.) Rubber Works and dealer in leather and mill supplies, has made an assignment to the Bank of Commerce of Evansville for the benefit of his creditors. His assets are estimated at $10,000 and his liabilities at $7000.

—The Pan-American Co. (New York), described in THE INDIA RUBBER WORLD for October 15 as "A New Promoter of Export Trade" with the rubber-growing countries, are in the hands of the sheriff, having confessed judgment for rent of premises in the New York Industrial building, and other debts.

—There was a fire on January 10 in the three-story frame manufactory of the Excelsior Waterproof Co. at Cleveland, Ohio, resulting in a loss of $1500, without insurance.

—The Apsley Rubber Co. (Hudson, Mass.) have lately added twenty eight sewing-machines to their stitching department.

—Mr. Isaac Crocker, manager of the Lawrence (Mass.) Rubber Co., and Miss Anna T. Newcomb, of Tolland, Conn., were married in the latter town on New Year's day.

—A fire which broke out in the night in the St. Paul (Minn.) store of the Goodyear Rubber Co. in January damaged the stock to an extent estimated at $5000. An electric wire is thought to have caused the fire.

—C. E. Talmadge, of Middletown, N. Y., has secured the agency for that section of country for the goods of the Mineralized Rubber Co. (New York).

—The factory of the New Brunswick Rubber Co. was started on January 10, after a shut-down of three weeks.

—Cornelius Riley has sued the National India Rubber Co. (Bristol, R. I.) for $10,000 for injuries received while at work making an excavation on their premises last summer.

—The National India Rubber Co. are having several artesian wells bored on their premises at Bristol, R. I. Their daily consumption of water is 3,000,000 gallons, which makes it desirable, if possible, to own the sources of supply; besides, the artesian-well water is said to corrode the boilers less than the water obtained from the water-works.

—The Hudson (Mass.) Rubber Co. is to be reorganized as a joint-stock company, with a working capital reported at $25,000. Edmund M. Stowe will be president, Horace E. Stowe treasurer, and W. W. Wilder manager and superintendent. The product is rubber mackintoshes.

—Owing to the proposed widening of West Broadway at Chambers street, in New York, Sinclair & Co., dealers in mackintoshes and other rubber goods, have removed their place of business on Chambers from No. 136 to No. 142.

—The employés of the Apsley Rubber Co. (Hudson, Mass.), to the number of 250, enjoyed a genuine holiday on Saturday, January 19, when President Apsley treated them to a free excursion to Boston, including tickets to a theater. This was in lieu of the annual dinner tendered to the employés at Hudson. Mr. Apsley left Congress on Mr. Cleveland's hands while he ran down to Boston to spend the day with the excursionists.

—The Standard Rubber Corporation (Brockton, Mass.), at their annual meeting on January 16, reëlected W. W. Cross president, D. J. Pierce vice-president, B. F. Pennington treasurer, and Calvin Austin (Boston) clerk. The directorate, in addition to the above, includes B. J. Remich.

—Richard Lutters, who had been employed by the India Rubber Comb Co. since their beginning, in 1856, left lately to take a position with the Goodyear Vulcanite Co. (Morrisville, Pa.) He will retain his residence at College Point, L. I., where he is one of the village trustees.

—The Bowers Rubber Co. (San Francisco) are sending out a handsomely gotten-up set of exterior and interior views of their new works at the foot of Commercial street, with an invitation to the trade to visit the only factory on the Pacific coast "importing and working crude rubber, and manufacturing all kinds of rubber hose, belting, packing, tubing, and molded goods." W. F. Bowers is president of the company.

—Betzler & Wilson, manufacturers of fountain pens and all kinds of hard-rubber turned goods, at Akron, Ohio, advise THE INDIA RUBBER WORLD of their removal to a larger building, with increased facilities, in East South street.

—H. D. Layman, whose pneumatic sporting boat was described in THE INDIA RUBBER WORLD in October last, has arranged for its exclusive sale through A. G. Spalding & Bros. The latter report that a good demand for the boat is growing up.

—Isaac H. Sawyer and Miss Bertha A. Colby were married on the evening of January 15 at Wollaston, Mass., a suburb of Boston. The bridegroom is the well-known manager of the rubber department of the Brown Shoe Co., of St. Louis, and a director in the same company.

—In the great fire at Toronto, Ont., on January 6, the stock of the Williamson Rubber Co. was damaged to the extent of $4000 by the falling of an adjacent building, but the loss was fully covered by insurance.

—L. D. Apsley, president of the Apsley Rubber Co., has been elected president of the Millay Last Co., at Hudson, Mass. At the recent annual meeting the capital stock was increased from $14,000 to $20,000.

—The Goodyear Vulcanite Co. (Morrisville, Pa.) are putting in a new steam-engine, the foundation for which will require 40,000 bricks.

—Mr. A. F. Townsend, vice-president of the Manhattan Rubber Mfg. Co., as a member of the Seventh Regiment was one of the New Yorkers who went over to Brooklyn to help preserve peace during the recent street-railway strike. Two other members of the Seventh who went to the front were Messrs. George B. Hodgman and S. T. Hodgman, of the Hodgman Rubber Co. Still another member of the New York rubber trade who shouldered a gun was Mr. Crane, of Camp & Crane, who belongs to the Twenty-third Regiment.

—Mr. Harry W. Huthsing, Jr., general manager of the Columbia Rubber Co., of St. Louis, was a recent visitor to New York.

—Mahlon C. Martin, of the United States Rubber Co., is one of the two principal owners of the Bogotá horse railroad, in Colombia. It is the opinion of Charles R. Flint, expressed in newspaper interviews, that American interests in that country are not likely to suffer from the prevalent war talk there.

—A new concern at Worcester, Mass., is the Ramsdell-Rawson Co., with $5400 capital, organized to manufacture and repair bicycles and rubber tires for bicycles and vehicles. Otis Rawson is president, Frederick M. Ramsdell vice-president, and Louis W. Rawson treasurer and manager.

—Nathaniel Fisher & Co., jobbers in shoes and rubbers in New York, who were driven by fire from No. 146 Duane street, some time ago, returned to their old quarters on January 26.

—The Hon. E. S. Converse and Mrs. Converse sailed from New York on January 19 for Europe, intending to spend a few months in travel in the south of Spain, Italy, up the Nile, and through Palestine, returning by way of Constantinople.

—Johnson, Moody & Co., of Boston, on January 17 conducted another auction sale of rubber shoes, at which the auctioneer, F. H. Nazro, sold the whole 5000 cases offered in less than two hours, at satisfactory prices.

—At the annual meeting of the Middlesex Rubber Works Company the following officers were elected, H. H. Francis, Prest., J. Maus Schermerhorn of New York, Treas., D. M. Baldwin, Sec'y. The Company have recently opened an office in New York city, 253 Broadway. This office will be under the charge of Mr. J. Maus Schermerhorn. It was found necessary to open this office to take care of the New York city trade. The main office will be at the factory in Middletown, Conn. The Company are making a full line of dress shields and in addition they will shortly fit up for manufacturing rubber-tires for bicycles and wagons, also other mold work. This is a business with which Mr. Francis is thoroughly conversant, and has a host of friends in the Bicycle Trade.

—Harry Hall has given up his retail store in Summer street, Boston, to resume his old position with the Stoughton Rubber Co., at No. 24 Summer street.

—The India-rubber trade was well represented at the exhibition of the Boston Art Club by a portrait of Mr. George H. Hood, president of the Boston Rubber Co., by a Boston artist.

—Boston was visited recently by a prominent banker of Grand Rapids, Mich., and by a leather-shoe manufacturer from the same city, with a view, it was reported, to learning whether capital could be secured there for starting a rubber-shoe factory in Grand Rapids. It is natural, perhaps, that people in the Michigan city which the late James W. Converse helped so much to develop should regard rubber-shoe making as a paying business.

—The New England selling-agency of the Manhattan Rubber Manufacturing Co., at Boston, of which Frank E. Hall is to be manager, will be known as the Ireson Rubber Co.

—Mr. C. S. Knowles, of No. 7 Arch street, Boston, is making a visit to Jamaica.

—The last number of the Lawrence (Mass.) *Journal of the Fine Arts* contains an imposing advertisement of the Lawrence Rubber Co., with a portrait of Manager Isaac A. Crocker.

—A jury in the Boston superior civil court returned a verdict of $6400 for the plaintiff in the case of Peter Bogbongian *v.* the Woonsocket Rubber Co. The suit was brought to recove $30,000 damages for the loss of an arm in a rubber-grinding mill in the defendants factory at Woonsocket.

—Hollister & Noble, rubber-goods dealers at Auburn, N. Y., have been sued by Mrs. Helen M. Sunderlin for $20,000 for injuries claimed to have been received from a fall in the elevator shaft in their store.

—The various manufacturing operations in this city of the Metropolitan Rubber Co. have been concentrated at Grand street and East river, in the extensive building formerly occupied by the American Tobacco Co. The offices of the company have also been transfered to this building, and President Place is to be found there hereafter. The retail store of the company will remain at No 676 Broadway.

—Col. W. G. Winans of the Peerless Rubber Mfg. Co. was a recent sufferer from *La Grippe*, but is now recovered and at the Warren street store daily.

—The Fiske Rubber Co. is the name of a new concern started in Bangor, Maine, on the first of the month. Mr. H. G. Fiske, formerly with the Tyer Rubber Co., is the proprietor. The store is situated on Main street, at the corner of Middle, and has a fnll stock of rubber goods in all lines.

—Mr. Walter S. Ballou, sales agent of the Woonsocket Rubber Co., is one of the lessees of a river near New York where there is fine trout fishing at one season of the year, and at another remarkably good striped bass fishing. The lease extends for five years.

—Mr. T. Alejandro Santos, of the mercantile firm of Santos & Co., No. 16 William street, has been appointed by the government of Bolivia as consul in New York.

—The principal offices of the Pope Manufacturing Co. were removed during holiday week from Boston to Hartford, Conn., where a handsome new building had been erected for their accommodation. Telegrams addressed to the company will be received by operators located within the building.

—The Superior Rubber Type Co. and Berman & Co., of Chicago, between which there has long been active competition, have been consolidated under the style of the firm first named. They are said now to have the largest rubber-type establishment in existence.

—Says one of the bicycle papers: "The reduction in price of pneumatic tires since 1892 is due in a large measure to improved methods of vulcanization, which renders a light coating of rubber as durable as the old heavy one and far more resilient." Exactly what this new method of vulcanization is would be interesting to know. As far as we know nothing new in the line of vulcanization has been produced in some years.

## INDIA-RUBBER STATISTICS FROM NUMEROUS SOURCES.

ACCORDING to Reimers & Meyer's table of the exports of crude India-rubber from Pará and Manáos for 1894, it will be seen that the shipments exceeded the record for any former year, the tendency having been constantly upward. The exports for 1894, however, exceeded those of the former year by only 757,261 pounds. At the same time, if account be taken of stocks at Pará at the beginning and the close of 1894, the figures will be found to bear out the claims made for some time past of reduced receipts at Pará. In other words, the exports for 1894 exceeded the receipts there, according to the records of the firm named, by 1,136,491 pounds. The names of the leading exporters are given below with the consignments for Europe and the United States, respectively:

| EXPORTERS. | United States. | Europe. | Total. |
|---|---|---|---|
| *Pusinelli, Prüsse & Co | 5,598,206 | 5,839,077 | 11,417,283 |
| Norton & Co., and A. H. Alden | 6,870,181 | 573,771 | 7,443,952 |
| La Rocque, Da Costa & Co. | 5,023,629 | 1,778,538 | 6,802,167 |
| Rud Ziets | 307,542 | 3,094,226 | 3,401,768 |
| Banco De Manáos | 2,675,416 | 60,682 | 2,736,098 |
| Denis Crouan & Co. | | 1,712,824 | 1,712,824 |
| Singlehurst, Brocklehurst & Co. | 499,132 | 1,026,946 | 1,526,078 |
| R. F. Sears & Co | 510,385 | 684,462 | 1,194,847 |
| A. De Freitas & Co. | | 1,026,684 | 1,026,684 |
| B. A. Antunes & Co. | 272,872 | 681,038 | 953,910 |
| A. Berneaud & Co | 236,825 | 429,048 | 665,873 |
| Edmund Reeks | 427,079 | | 427,079 |
| H. De La Beaume | 317,125 | 58,461 | 375,586 |
| Marius & Levy | | 368,448 | 368,448 |
| A. Fernandes & Co. | | 355,322 | 355,322 |
| Kahn, Polack & Co. | 26,153 | 280,506 | 306,659 |
| Luiz Schill & Sobrinho | 7,226 | 280,945 | 288,171 |
| J. H. Andresen | 48,784 | 213,123 | 261,907 |
| Freitas, Sobrinho & Co. | 94,208 | 144,739 | 238,947 |
| Pires Teixeira & Co | 32,915 | 181,910 | 214,825 |
| From Serpa | | 50,245 | 50,245 |
| From Iquitos | | 181,665 | 181,665 |
| Sundry small shippers | 134,708 | 846,646 | 981,354 |
| Total | 22,062,386 | 19,869,306 | 42,931,692 |
| Total, 1893 | 25,011,027 | 17,163,404 | 42,174,431 |
| Total, 1892 | 25,202,008 | 15,603,324 | 40,805,332 |
| Total, 1891 | 23,872,690 | 15,335,157 | 39,207,847 |
| Total, 1890 | 21,137,177 | 15,004,652 | 36,141,829 |
| Total, 1889 | 20,004,006 | 14,946,888 | 34,950,894 |

An interesting point shown by these figures has been referred to already in THE INDIA RUBBER WORLD—the increased share of the Brazilian output that has been taken of late by Europe. The United States is still in the lead, it is true, but the percentage of the Pará exports consigned to Europe has been growing, as will be seen below:

| | | | |
|---|---|---|---|
| In 1889 | 42.75% | In 1892 | 38.25% |
| In 1890 | 41.5 % | In 1893 | 40.75% |
| In 1891 | 39 % | In 1894 | 46.55% |

Further statistics would be necessary, however, to determine the ultimate destination of Pará rubber, since much of it changes ownership across the Atlantic one or more times before it finally reaches the factory.

From Pusinelli, Prüsse & Co. (Pará) we have received the following statement of the exports by grades during the year, as follows:

| GRADES. | United States. | Europe. | Total. |
|---|---|---|---|
| Fine | 12,679,120 | 13,110,370 | 25,789,490 |
| Entrefine—Medium | 2,061,356 | 1,872,563 | 3,933,919 |
| Sernamby—Coarse | 5,329,741 | 3,971,184 | 9,300,925 |
| Caucho | 1,992,169 | 915,189 | 2,907,358 |
| Total | 22,062,386 | 19,869,306 | 41,931,692 |

It will be seen that last year the United States received something less than half the fine rubber shipped from Pará, whereas in the year before the proportions were reversed as between the United States and Europe.

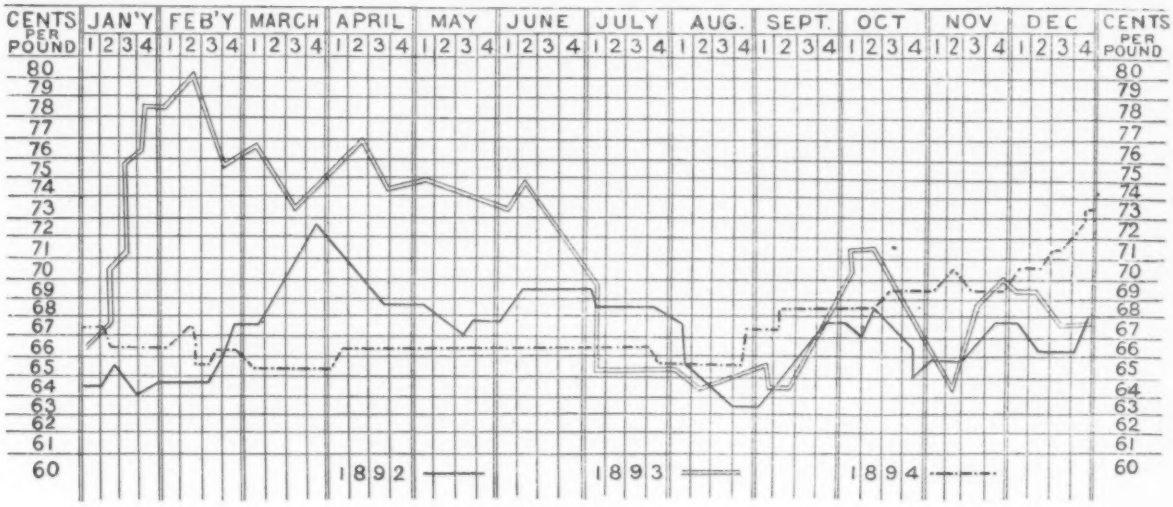
### GOULD COMMERCIAL CO.'S STATISTICS.

THE diagram accompanying this article shows in a way that is easily understood at a glance the comparative prices of crude India-rubber in the New York market for three years past. It is furnished by the Gould Commercial Co. (New York and Boston) who favor us also with the following analysis of the crude India-rubber movement for 1894 as shown by their office records. The figures refer to tons of 2240 pounds=20 cwt.:

| Imports of— | United States. | Europe. | Total. |
|---|---|---|---|
| Paras | 10,958 | 6,970 | 17,928 |
| Centrals | 1,367 | 515 | 1,882 |
| Africans | 2,328 | 5,882 | 8,210 |
| East Indian | 411 | 844 | 1,255 |
| Totals | 15,054 | 14,211 | 29,275 |

These figures represent a total world's movement of India-rubber for the year of 65,564,800 pounds.

* Representing Reimers & Meyer (New York and Boston) and Heilbut, Symons & Co, (London and Liverpool.)




QUOTATIONS FOR ISLAND SPOT FINE PARA.

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## IMPORTS OF THE UNITED STATES.

THE official figures of the United States custom-houses, while differing from private records of the imports of India-rubber for 1894, confirm their showing of a falling-off as compared with the preceding year. The government figures follow:

| | 1894. | 1893. | 1892. |
|---|---|---|---|
| Imports of India-rubber . lbs. | 35,370,889 | 39,634,706 | 37,469,715 |
| Exports of same ..... | 1,615,076 | 1,846,727 | 996,550 |
| Net Imports..... | 33,755,813 | 37,787,979 | 36,473,165 |
| Value of Total Imports .....$ | 16,090,134 | $17,099,254 | $18,921,432 |

These figures do not include crude Gutta-percha, of which the United States officially reports the receipt in 1894 of 704,168 pounds, valued at $97,631.

## THE ENGLISH FIGURES.

GREAT BRITAIN imported last year a larger amount of India-rubber than in any former year, though the amounts exported were also larger than usual, leaving the net imports at about the average. The figures in detail follow, Gutta percha being excluded here also:

| | 1894. | 1893. | 1892. |
|---|---|---|---|
| Imports of Indla-rubber....lbs. | 33,953,472 | 32,836,176 | 30,492,256 |
| Exports of same..... .... | 19,176,304 | 16,710,848 | 16,868,423 |
| Net Imports..... | 14,777,168 | 16,126,328 | 13,623,832 |

The net importations by France, Germany, and Italy, in 1894, were larger than in the year preceding, while Austria-Hungary reported a falling-off.

## REVIEW OF THE RUBBER MARKET.

AT this season a decline in the price of crude rubber is usual, and 1895 does not prove an exception, the quotations of last month being shaded somewhat in this. Arrivals during January were large in both Pará and African sorts. The New York custom-house records show the declared value of all rubber imports for the five weeks ending February 1 to have been very nearly $2,500,000—equal to one-eighth of the declared value of all the rubber imported by the United States last year. A large part of the receipts from Pará went direct to manufacturers, but there is enough rubber in the open market to be a matter of interest, with a tendency on the part of holders to grant concessions to buyers.

Meanwhile the generally depressed condition of business prevents a condition of activity in the rubber-manufacturing interests. The season is well-nigh over in the shoe industry, leading to reports as to a general shutting-down of factories, which lack verification. It is an open secret, however, that they are working at less than full capacity, and some of them may experience a season of inactivity if there should be open weather during the spring season. Referring to an impression that the rubber-shoe industry has escaped the ill effects of stagnant business, the assertion comes from within the United States Rubber Co. that the production of shoes for the past year has been $5,000,000 less than the combined capacity of the factories

This is the season for the beginning of active operations in the hose line, but there is nothing upon which to base predictions of a large business beyond the fact that, on account of cautious purchases by consumers for a year or two past, stocks are low. Generally it may be said, in this branch of the trade as well as in other mechanical lines, manufacturers are more optimistic than they were a few months ago. As for the bicycle-tire trade, there has been no indication that supplies will be wanting, no matter how large the demand may be.

In regard to the financial situation, Messrs. Simpson & Beers, brokers in crude India-rubber and commercial paper (New York), advise us as follows:

"The latter part of January witnessed quite a change from previous rates for mercantile paper, owing chiefly to the financial muddle in Washington and the enormous exports of gold, and the treasury reserve in gold being reduced to about $44,000,000. As we write there is a prospect of a bond issue of $100,000,000. We revise rates as follows: First-class receivables, 4@5 per cent., and prime single-name 5@6 per cent., at four to six months' maturity."

On the whole, higher prices for crude rubber are not indicated by any conditions now in sight.

The latest quotations in the New York market are:

| | | | | | |
|---|---|---|---|---|---|
| Pará, fine, new t a | 71 | @73 | Sierra Leone | 25@42 |
| Pará, fine, old | 75 | @78 | Benguela | 48@49 |
| Pará, coarse, new t a | 50 | @54 | Kongo Ball | 38@40 |
| Pará, coarse, old | | | Cameroon Ball | 36@37 |
| Caucho (Peruvian) strip | 51 | @52 | Flake, Ord. and Lump | 24@25 |
| Caucho (Peruvian) ball | 54 | @55 | Accra Flake | 15@18 |
| Mangabeira, sheet | 36 | @40 | Liberian Flake | 25@26 |
| Esmeralda, sausage | 52 | @52½ | Primest Pinky Madr | 60@62 |
| Guayaquil, strip | 36 | @43 | Madagascar, black | 42@44 |
| Nicaragua, scrap | 51 | @52 | Borneo | 26@45 |
| Nicaragua, sheet | 49 | @50 | Gutta-percha, fine grade | 1.30 |
| Thimbles | 37 | @38 | Gutta-percha, medium | 1.00 |
| Tongues | 35 | @37 | Gutta-percha, hard white | 85 |

PRICES FOR JANUARY (ISLAND RUBBER).

| | 1895. | | 1894. | | 1893. | |
|---|---|---|---|---|---|---|
| | Fine. | Coarse. | Fine. | Coarse. | Fine. | Coarse. |
| First | 73 | 51 | 67 | 47 | 66 | 47½ |
| Highest | 74 | 52 | 67 | 47 | 78 | 55 |
| Lowest | 71½ | 50 | 66 | 44½ | 66 | 47½ |
| Last | 71½ | 50 | 66 | 46 | 78 | 55 |

The statistical position of Pará rubber in New York and elsewhere is as follows, the figures expressing tons of 1000 kilograms:

| | Fine and medium. | Coarse. | Total. | Totals one year ago. |
|---|---|---|---|---|
| Stock, December 31, 1894 | 953 | 128 | 1081 = | 639 |
| Arrivals, January | 936 | 355 | 1291 = | 1579 |
| Aggregating | 1889 | 483 | 2372 = | 2214 |
| Deliveries, January | 1389 | 417 | 1806 = | 1285 |
| Stock, January 31 | 500 | 66 | 566 = | 929 |

| | 1895. | 1894. |
|---|---|---|
| Stock in England, January 31 | 750 | 874 |
| Deliveries in England, January | 850 | 752 |
| Pará receipts, January | 3425 | 2370 |
| Stock in Pará, January 31 | 1050 | 1377 |
| World's supply January 31 (excluding Caucho) | 4150 | 4160 |
| Pará receipts since July 1 | | 12715 |

## IMPORTS FROM PARA.

THE imports in detail of India-rubber direct from Pará at the port of New York, since our last report, have been as follows, expressed in pounds:

**January 3**—By the steamer *Cametense*, from Manáos and Pará:

| | Fine. | Medium. | Coarse. | Caucho. | Total. |
|---|---|---|---|---|---|
| N. Y. Commercial Co. | 268,100 | 24,600 | 130,900 | 1,000 | 424,600 |
| From A.H Alden | 137,000 | 11,000 | 103,400 | 1,000 | 252,400 |
| A. Berneaud & Co. | 57,100 | 5,600 | 13,700 | | 76,400 |
| Brocklehurst & Co. | 74,000 | 8,000 | 13,800 | | 95,800 |
| Boston Rub. Shoe Co. | 189,900 | 26,000 | 27,500 | 7,000 | 250,400 |
| From La Roque da Costa & Co | 82,400 | 11,000 | 15,000 | 7,000 | 115,400 |
| Banco Manáos | 107,500 | 15,000 | 12,500 | | 135,000 |
| Joseph Banigan | 131,600 | 22,000 | 22,800 | | 176,400 |
| From La Roque da Costa & Co | 30,600 | 8,000 | 10,800 | | 49,400 |
| Banco Manáos | 101,000 | 14,000 | 12,000 | | 127,000 |
| Reimers & Meyer | 112,400 | 24,200 | 38,200 | | 174,800 |
| From Prusse, Pusinelli & Co., Pará | 74,600 | 8,200 | 25,200 | | 108,000 |
| Prusse, Pusinelli & Co., Manáos | 37,800 | 16,000 | 13,000 | | 66,800 |
| Kunhardt & Co | 17,800 | 8,800 | | | 26,600 |
| From Prusse, Pusinelli & Co., Manáos | | | | | |
| Lawrence Johnson & Co | 33,100 | 4,400 | 13,300 | | 50,800 |
| From La Roque da Costa & Co | 11,300 | 1,100 | 4,800 | | 17,200 |
| Banco Manáos | 21,800 | 3,300 | 8,500 | | 33,600 |
| P. Lima | 1,100 | | 700 | | 1,800 |
| From Pires Teixiera & Co | | | | | |
| Total | 754,000 | 110,000 | 233,400 | 8,000 | 1,005,400 |

**January 18.**—By the *Cearense*, from Pará:

| | Fine. | Medium. | Coarse. | Caucho | Total. |
|---|---|---|---|---|---|
| N. Y. Commercial Co. | 351,600 | 35,600 | 174,900 | 1,500 | 563,600 |
| From A. H. Alden | 282,700 | 24,300 | 154,400 | 1,000 | 462,400 |
| A. Berneaud & Co | 63,900 | 11,000 | 19,000 | 500 | 94,400 |
| R. F. Sears & Co. | 5,000 | 300 | 500 | | 5,800 |
| Reimers & Meyer | 57,800 | 11,400 | 69,000 | | 138,200 |
| From Pusinelli, Prusse & Co. | | | | | |
| Otto G. Mayer & Co. | 5,000 | 700 | 10,300 | | 16,000 |
| From Rud. Zeitz | | | | | |
| Shipton Green | 10,300 | 700 | 2,500 | 500 | 14,000 |
| From Edmund Reeks | | | | | |
| P. Lima | 1,500 | | 1,000 | | 2,500 |
| From Pires Teixeira & Co. | | | | | |
| Total | 426,200 | 48,400 | 257,700 | 2,000 | 734,300 |

**January 21.**—By the *Kaffir Prince*, from Pará:

| | Fine. | Medium. | Coarse. | Caucho | Total. |
|---|---|---|---|---|---|
| Boston Rub. Shoe Co. | 28,600 | 9,600 | 13,800 | | 52,000 |
| From La Roque da Costa & Co | | | | | |
| Reimers & Meyer | | 6,800 | 45,200 | | 52,000 |
| From Prusse, Pusinelli & Co. | | | | | |
| Lawrence Johnson & Co | 11,400 | 700 | 22,800 | | 34,900 |
| From La Roque da Costa & Co | | | | | |
| Joseph Banigan | | | 23,400 | | 23,400 |
| From La Roque da Costa & Co | | | | | |
| N. Y. Commercial Co. | 9,000 | 700 | 3,000 | | 12,700 |
| From A. Berneaud & Co | | | | | |
| Total | 49,000 | 17,800 | 108,200 | | 175,000 |

**January 22.**—By the steamer *Lisbonense*, from Manáos and Pará:

| | Fine. | Medium. | Coarse. | Caucho. | Total. |
|---|---|---|---|---|---|
| Boston Rub. Shoe Co. | 159,600 | 21,000 | 67,800 | 29,200 | 277,900 |
| From Banco Manáos | 126,400 | 16,300 | 46,800 | | 189,500 |
| La Roque da Costa & Co | 33,200 | 5,000 | 21,000 | 29,200 | 88,400 |
| Reimers & Meyer | 89,800 | 54,100 | 55,000 | 23,300 | 222,200 |
| From Prusse, Pusinelli & Co., Manáos | 82,800 | 29,600 | 29,100 | 300 | 141,800 |
| Freitas Sobrinho & Co. | 7,000 | 1,300 | 1,900 | | 10,200 |
| Prusse, Pusinelli & Co., Pará | | 23,200 | 24,000 | 23,000 | 70,200 |
| N. Y. Commercial Co. | 103,900 | 7,700 | 41,500 | 2,000 | 155,100 |
| Brocklehurst & Co, Manáos | 68,900 | 5,000 | 15,700 | | 89,600 |
| A. H. Alden | 35,000 | 2,700 | 25,800 | 2,000 | 65,500 |
| Joseph Banigan | 91,400 | 11,200 | 26,600 | 600 | 129,800 |
| From Banco Manáos | | | | | |
| Lawrence Johnson & Co | 16,500 | 1,000 | 2,300 | | 19,800 |
| From B. Antunes & Co. | 9,300 | 700 | 1,300 | | 11,300 |
| A. Berneaud & Co. | 7,200 | 300 | 1,000 | | 8,500 |
| Charles Ahrenfeldt & Son | 7,500 | | | 30,500 | 38,000 |
| From H. de La Baume, Iquitos | | | | | |
| P. Lima | 4,000 | | 2,000 | | 6,000 |
| From Pires Teixiera & Co. | | | | | |
| George G. Cowl | | | 6,000 | | 6,000 |
| From Rud Zeitz | | | | | |
| Total | 472,700 | 95,300 | 201,200 | 85,600 | 854,800 |

| | |
|---|---|
| January Imports from Pará | 2,869,500 |
| January, 1894 | 3,750,000 |
| January, 1893 | 3,349,000 |

PARA IMPORTS VIA EUROPE.

**January 6.**—By steamer *Aurania*, from Liverpool:

| | POUNDS. |
|---|---|
| Reimers & Meyer—Fine (Bolivian) | 31,000 |
| Otto G. Mayer & Co.—Fine (Bolivian) | 12,000 |
| **January 19.**—By the steamer *Lucania*, from Liverpool: | |
| Reimers & Meyer—Fine (Bolivian) | 31,000 |
| Coarse (Islands) | 50,000 |
| **January 20.**—By the steamer *La Bourgogne*, from Havre: | |
| Reimers & Meyer—Fine | 11,000 |
| **January 26.**—By the steamer *Etruria*, from Liverpool: | |
| George A. Alden & Co.—Fine | 9,200 |
| Total for January | 144,200 |

## OTHER NEW YORK ARRIVALS.

BELOW will be found in detail the imports at New York, during January, 1895, of India-rubber from Mexico, Central America, and South America, other than Pará grades; also, arrivals at New York of African and East Indian sorts.

### CENTRALS.

| | POUNDS. |
|---|---|
| JAN. 3.—By the *Orizaba*=Mexican ports: | |
| H. Marquardt & Co | 900 |
| JAN. 3.—By the *Alvena*=Port Limon: | |
| A. N. Rotholz (Nicaragua) | 500 |
| Hoadley & Co (Nicaragua) | 500 |
| Total | 1,000 |
| JAN. 3.—By the *Finance*=Aspinwall: | |
| A. Santos & Co | 6,980 |
| J. M. Ceballos & Co | 4,950 |
| Roldan & Van Sickle (Esmeralda) | 4,626 |
| G. Amsinck & Co. (Esmeralda) | 4,500 |
| New York Commercial Co | 3,200 |
| J. Aparicio & Co. (Guatemala) | 3,185 |
| Flint & Co | 3,800 |
| R. F. Cornwell (Nicaragua) | 2,635 |
| Lanman & Kemp | 2,316 |
| Munoz & Espriella (Guatemala) | 1,993 |
| Bock & Co. (Panama) | 1,690 |
| W. R. Grace & Co. (Esmeralda 1,120) | 1,440 |
| Dumarest & Co (Esmeralda) | 1,320 |
| Hirzel, Feltman & Co (Esmeralda) | 1,165 |
| Hoadley & Co. (Nicaragua) | 973 |
| P. Pardo & Co | 394 |
| Piza Nephews & Co. (Mexican) | 360 |
| Wallace, Muller & Co. (Esmeralda) | 2,300 |
| Total | 46,157 |
| JAN. 3.—By the *Regulus*=Belize: | |
| Eggers & Heinlein (Nicaragua) | 1,500 |
| Eggers & Heinein (Tuno) | 4,500 |
| K. Mandell & Co | 700 |
| Total | 6,700 |
| JAN. 3.—By the *Galileo*=Bahia: | |
| Reimers & Meyer (Pernambuco) | 2,500 |
| JAN. 8.—By the *Adirondack*=Cartagena: | |
| Punderford & Co. (virgin) | 1,500 |
| Kunhardt & Co | 500 |
| Total | 2,000 |
| JAN. 14.—By the *Seneca*=Mexican ports: | |
| H. A. Forrest & Co. (Tuxpan) | 500 |
| Dodge & Olcott (Tuxpan) | 200 |
| H. Marquardt & Co. (Tuxpan) | 300 |
| The Fairbanks Co | 100 |
| Total | 1,100 |
| JAN. 12.—By the *City of Pará*=Colon: | |
| R. F. Cornwell | 1,718 |
| W. Loaiza & Co | 1,453 |
| Flint & Co | 1,058 |
| Eggers & Heinlein | 450 |
| A. P. Strout | 5,806 |
| F. Probst & Co | 304 |
| R. G. Bartholde | 147 |
| Andreas & Co | 1,485 |
| Total | 12,421 |
| JAN. 13.—By the *Allianca*=Colon: | |
| A. Santos & Co | 13,460 |
| Roldan & Van Sickle | 11,794 |
| Bock & Co | 5,682 |
| W. R. Grace & Co | 5,338 |
| New York Commercial Co | 5,300 |
| Dumarest & Co | 4,900 |
| G. Amsinck & Co | 4,800 |
| Flint & Co | 4,930 |
| J. M. Ceballos & Co | 2,800 |
| Munoz & Espriella | 1,692 |
| Hirzel, Feltman & Co | 600 |
| Piza Nephews & Co | 1,282 |
| Hoadley & Co | 175 |
| Total | 62,753 |
| JAN. 13.—By the *Flamborough*=Livingston: | |
| A. S. Lascelles & Co | 100 |
| JAN. 14.—By the *Cuidad Condal*=Vera Cruz: | |
| H. Marquardt & Co. (Mexican) | 1,000 |
| JAN. 14.—By the *Newport*=New Orleans: | |
| F. H. Robinson (Nicaragua) | 10,500 |
| W. H. Crossman & Co. (Nicaragua) | 8,000 |
| Earle Brothers (Tuno, 3,500) | 23,000 |
| Total | 41,500 |
| JAN. 16.—By the *Maskelyne*=Bahia: | |
| Reimers & Meyer (Pernambuco) | 5,000 |
| JAN. 18.—By the *Cearense*=Pará: | |
| Shipton Green (Pernambuco) | 3,500 |
| G. Amsinck & Co. (Pernambuco) | 800 |
| Total | 4,300 |
| JAN. 19.—By the *Welhaven*=Cape Gracias: | |
| Eggers & Heinlein (Nicaragua) | 3,500 |
| Eggers & Heinlein (Tuno) | 13,500 |
| Otto G. Mayer & Co (Nicaragua) | 1,500 |
| K. Mandell & Co. (Nicaragua | 100 |
| Total | 18,600 |
| JAN. 20.—By the *El Mar*=New Orleans: | |
| Earle Brothers | 11,500 |
| F. H. Robinson | 4,600 |
| A. T. Morse | 3,900 |
| Total | 20,000 |
| JAN. 22.—By the *Seguranca*=Mexico: | |
| H. A. Forrest & Co | 1,500 |
| J. W. Wilson & Co | 1,500 |
| Louis Monjo & Co | 1,000 |
| Graham, Hinkley & Co | 500 |
| Total | 4,500 |
| JAN. 22.—By the *Advance*=Colon: | |
| J. M. Ceballos & Co | 18,500 |
| A. Santos & Co | 7,560 |
| Bock & Co | 2,539 |
| Andreas & Co | 1,546 |
| Piza Nephews & Co | 530 |
| Total | 30,675 |
| JAN. 22.—By the *Colombia*=Colon: | |
| J. Aparicio & Co. (Guatemala) | 9,732 |
| R. F. Cornwell (Nicaragua) | 2,387 |
| Samper & Co (Nicaragua) | 1,610 |
| Munoz & Espriella (Guatemala) | 1,281 |
| A. P. Strout (Nicaragua) | 883 |
| Roldan & Van Sickel (Sausage) | 696 |
| Flint & Co. (Nicaragua) | 678 |
| J. G. Toegel | 243 |
| Total | 17,510 |
| JAN. 22.—By the *Coleridge*=Bahia: | |
| George A. Alden & Co. (Pernambuco) | 6,000 |
| Reimers & Meyer (Pernambuco) | 2,000 |
| Total | 8,000 |
| JAN. 22.—By the *Alene*=Haiti, etc.: | |
| A. N. Rotholtz (Nicaragua) | 300 |
| P m, Forwood & Kellock (Cartagena) | 300 |
| Total | 600 |
| JAN. 28.—By the *Orizaba*=Mexico: | |
| H. Marquardt & Co | 1,200 |
| F. Probst & Co | 500 |
| Total | 1,700 |
| JAN. 28—By the *El Dorado*=New Orleans: | |
| A. P. Strout | 9,780 |
| G. Amsinck & Co | 5,060 |
| Andreas & Co | 3,850 |
| W. R. Grace & Co | 1,320 |
| U. S. Commercial and Crop Advance Co | 770 |
| Flint & Co | 220 |
| Total | 21,000 |
| JAN. 31.—By the *Finance*=Colon: | |
| A. Santos & Co | 14,247 |
| G. Amsinck & Co | 8,000 |
| Roldan & Van Sickle | 2,436 |
| Dumorest & Co | 2,200 |
| Munoz & Espriella | 2,216 |
| W. R. Grace & Co | 1,600 |
| Lanman & Kemp | 314 |
| Total | 31,013 |

[Of the above, Esmeraldas, 11,036 pounds; Esmeralda Scrip, 3,200; Nicaragua, 314; Virgin slab, 4,700; Panama, 9,547; unspecified, 2,216.]

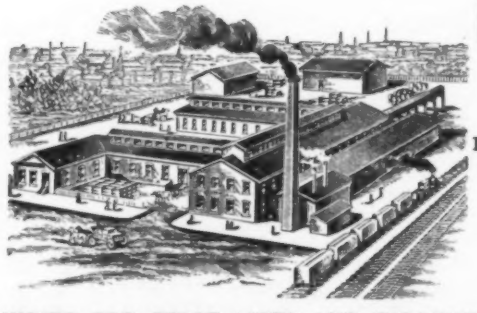
Total Centrals for January 341,029

### AFRICANS.

| | POUNDS. |
|---|---|
| JAN. 1.—By the *Westernland*=Antwerp: | |
| George A. Alden & Co.—Kongo | 3,200 |
| JAN. 4.—By the *Scandia*=Hamburg: | |
| George A. Alden & Co.—Gaboon | 6,800 |
| JAN. 4.—By the *Obdam*=Rotterdam: | |
| George A. Alden & Co.—Thimbles | 111,000 |
| JAN. 7.—By the *La Champagne*=Havre: | |
| Reimers & Meyer | 1,500 |
| JAN. 9.—By the *Teutonic*=Liverpool: | |
| George A. Alden & Co.—Gaboon | 4,200 |
| JAN. 10.—By the *Olinda*=Lisbon: | |
| George A. Alden & Co. | 45,000 |


# LAKE SHORE RUBBER COMPANY,

Manufacturers of



## INDIA RUBBER GOODS

OF EVERY DESCRIPTION

*Adapted to Mechanical Purposes.*

Belting and Hose, Brewers' Hose, Steam Hose, Air Brake Hose, Suction Hose, Tubing, Wagon Springs, Anti-Rattlers, Wringer Rolls, Steam Packing, Gaskets, Valves, Saw Bands, Hard Rubber Goods, Sand Paper Blankets, Mats and Matting, Mold Works, &c.

RUBBER SPECIALTIES TO ORDER.

OUR "U. S." BRAND OF HOSE IS UNEXCELLED.

*Office and Works: ERIE, PENNSYLVANIA.*

WRITE FOR PRICE LISTS AND DISCOUNTS.

*Mention the India Rubber World when you write*

JAN. 12.—By the *Paris*=Southampton:
Reimers & Meyer—Pinky Madagascar ..... 12,000

JAN. 12.—By the *Umbria*=Liverpool:
Reimers & Meyer—Accra ..... 15,000
Otto G. Mayer & Co.—Accra tails ..... 6,000
George A. Alden & Co.—Benguella. ..... 22,000
To Order ..... 5,000
Total ..... 48,000

JAN. 14.—By the *Mohawk*=London:
Reimers & Meyer—Madagascar ..... 15,000
Mozambique ..... 11,000
Total ..... 26,000

JAN. 17.—By the *Slavonia*=Hamburg:
Reimers & Meyer ..... 5,000

JAN. 17.—By the *Cervenum*=Lisbon:
George A. Alden & Co.—Benguella ..... 187,300
To Order—Benguella ..... 13,000
Total ..... 200,300

JAN. 18.—By the *Britannic*=Liverpool:
To Order ..... 1,000

JAN 19.—By the *New York*=Southampton:
William A. Brown & Co.—Madagascar ..... 5,000

JAN. 19.—By the *Lucania*=Liverpool:
Reimers & Meyer ..... 3,000
George A. Alden & Co.—Accra ..... 5,400
Cameroon ..... 600
Total ..... 9,000

JAN. 23.—By the *Belgenland*=Antwerp:
Reimers & Meyer—Kongo ball ..... 2,000

JAN. 26.—By the *Berlin*=Southampton:
Reimers & Meyer—Madagascar ..... 12,000
To Order—Madagascar ..... 20,000
Total ..... 32,000

JAN. 29.—By the *Freisland*=Antwerp:
Reimers & Meyer—Kassai ..... 3,000

JAN. 29.—By the *Phœnicia*=Hamburg:
George A. Alden & Co ..... 48,000
Reimers & Meyer ..... 9,000
Total ..... 57,000

JAN. 26.—By the *Etruria*=Liverpool:
To Order—Addah Niggers ..... 10,000

Total Africans for January ..... 582,000

## EAST INDIAN.

| | POUNDS. |
|---|---|
| JAN. 4.—By the *Scandia*=Hamburg: | |
| George A. Alden & Co.—Borneo ..... | 6,800 |
| JAN. 4.—By the *Obdam*=Rotterdam: | |
| George A. Alden & Co.—Assam ..... | 8,000 |
| JAN. 17.—By the *Slavonia*=Hamburg: | |
| Reimers & Meyer—Borneo ..... | 12,000 |
| JAN. 19.—By the *New York*=Southampton: | |
| George A. Alden & Co.—Penang ..... | 2,000 |
| Total East Indians for January ..... | 28,800 |

## GUTTA-PERCHA.

| | POUNDS. |
|---|---|
| JAN. 4—By the *Scandia*=Hamburg: | |
| Robert Soltau & Co ..... | 14,000 |
| JAN. 11—By the *Lydian Monarch*=London: | |
| To Order ..... | 700 |
| JAN. 24.—By the *Persia*=Hamburg: | |
| Robert Soltau & Co ..... | 58,000 |
| Total Gutta-percha for January ..... | 72,700 |

## RECAPITULATION.

| | POUNDS. |
|---|---|
| Pará—direct imports ..... | 2,869,500 |
| Pará—via Europe ..... | 144,200 |
| Centrals ..... | 341,029 |
| Africans ..... | 582,000 |
| East Indian ..... | 28,800 |
| Gutta-percha ..... | 72,700 |
| Total at New York for January ..... | 3,038,229 |

## BOSTON ARRIVALS.

| | POUNDS. |
|---|---|
| JAN. 7.—By the *Sicilia*=Hamburg: | |
| George A. Alden & Co., Africans ..... | 38,500 |
| JAN. 7.—By the *Kansas*=Liverpool: | |
| Reimers & Meyer, Africans ..... | 9,800 |
| Boston Rubber Shoe Co., Africans ..... | 24,000 |
| JAN. 7.—By the *Appomattox*=London: | |
| Boston Rubber Shoe Co., Africans ..... | 18,000 |
| JAN. 7.—By the *Michigan*=Liverpool: | |
| Reimers & Meyer, Pará ..... | 13,800 |
| To Order, Africans ..... | 31,000 |
| JAN. 13.—By the *Norseman*=Liverpool: | |
| George A. Alden & Co., Africans ..... | 7,300 |
| JAN. 21.—By the *Arbutus*=Africa: | |
| George A. Alden & Co., Africans ..... | 33,000 |
| JAN. 22.—By the *Parkmore*=London: | |
| George A. Alden & Co., East Indian ..... | 8,000 |
| Boston Rubber Shoe Co., Africans ..... | 12,000 |
| JAN. 23.—By the *Ottoman*=Liverpool: | |
| George A. Alden & Co., Africans ..... | 5,100 |
| JAN 25.—By the *Cambroman*=Liverpool: | |
| Reimers & Meyer, Africans ..... | 16,000 |
| Woonsocket Rubber Co., Africans ..... | 4,000 |
| Pará ..... | 17,500 |
| Reimers & Meyer, Pará ..... | 5,950 |
| Total Arrivals at Boston ..... | 243,950 |

## NEW ORLEANS.

DECEMBER.

| | POUNDS. | VALUE. |
|---|---|---|
| Nicaragua ..... | 35,528 | $12,947 |
| Colombia ..... | 1,050 | 328 |
| Total ..... | 36,578 | $13,275 |

JANUARY.

| | POUNDS. | VALUE. |
|---|---|---|
| Costa Rica ..... | 244 | $ 120 |
| Honduras ..... | 1,602 | 554 |
| Nicaragua ..... | 66,609 | 23,672 |
| Mexico ..... | 20,910 | 9,496 |
| Total ..... | 89,365 | $33,842 |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